ANNAMACHARYA UNIVERSITY

EXCELLENCE IN EDUCATION; SERVICE TO SOCIETY

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RAJAMPET, Annamayya District, A.P – 516126, INDIA.

RESEARCH & DEVELOPMENT CELL

Department wise Publications in Conferences& Book Chapters – No. of Titles
July 2025 to June 2026

Departments	CE	EEE	MECH	ECE	CSE	AI &DS	AIML	H & S	MBA	MCA	Total
No.of Papers Published in Conference	3	46	16	79	42	58	62	35	8	11	**360**

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET

Department of Civil Engineering

(b.CE) 2. Details of Conference Proceddings published with ISSN From July 2025 to June 2025

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume & Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/ International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Note:

Ensure that all entries are arranged in **chronological order (latest first)**, and **no field is left blank** — fill all fields **as applicable and available with valid sources.**

If any information is **not available,** clearly mention **"NA"** in that field.

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET

DEPARTMENT OF CIVIL ENGINEERING

(C.CE) 3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From Ist July 2025 to 31st June 2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	Parish Reddy Gantla, Monica, Vandana Ahuja, Nithin Aggrawal, Parul Goyal, **D. Gouse Peera (5)**	Integrating IoT Blockchain and Artificial Intelligence for Sustainable Computing in Finance and Green Investment Strategies	Conference	Advances in computation, communication and information Technology	IEEE, Faridabad, India	19-03-2026	International	979-8-3315-7767-4	https://doi.org/10.1109/ICAICCIT68829.2025.11434348	SCOPUS	-	https://ieeexplore.ieee.org/document/11434348	https://scholar.google.com/citations?user=Sg0WTYwAAAAJ&hl=en&oi=ao&gmla=ACrTK9W0PrQeqqnmxDXNL0q02tOp981tmhhlvKNfzUfSBnaCCz9xNvC3ufMPbIkaatCM2epfM4XyhY1ZiWIXLtKHF21M0f0S_hxyVd_Qrc&sciund=17950258296569723883	-
2	**J. Chinna Babu,** Adarsh Kumar, J. Mounika, **T.Naresh Kumar**, Y. Sudheer Kumar & **S. V. V. Prasad (6)**	Early Enhancements Within IoT Technology Integration for Ecological, Security, and Economic Auditing in Underground Mines: A Review	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	ICCCE 2024.	Springer Nature Link	19-11-2025	International	978-981-95-0269-1	https://doi.org/10.1007/978-981-95-0269-1_1	-	-	-	-	-
3	G. Omkar J. Hemalatha, B. Ramu, **D. Gouse Peera**, A Udaya Kumar **(5)**	Computational Techniques and smart manufacturing	RCA and LDPE partial replacement in bituminous mixtures	-	Taylor and Francis group	27-02-2026	International	978-1-003-67962-2	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003679622-1/rca-ldpe-partial-replacement-bituminous-mixtures-omkar-hemalatha-ramu-gouse-peera-sivva-hemanth-sai-uday-kumar	-	-	-	-	-

Note:

Ensure that all entries are arranged in **chronological order (latest first)**, and **no field is left blank** — fill all fields **as applicable and available with valid sources.**

If any information is **not available**, clearly mention **"NA"** in that field.

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET

Department of EEE

(b.EEE) 2. Details of Conference Proceddings published with ISSN From July 2025 to June 2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume & Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	**Muqthiar Ali Shaik,** Charan Teja Parnapalli , Chandana Meruva, Chaithanya Jangiti and Arun kumar Dudekula (5)	EEE	Cloud-Enabled IoT Wearable for Real-Time Maternal and Fetal Monitoring	Proceedings of the International Conference on Intelligent Systems for a Sustainable Future (ISSF 2026)	Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya	12-13 March 2026	Kanchipuram, India		Nil	16-06-2026	International	2589-4919	https://www.atlantis-press.com/proceedings/issf-26/126025078	Nil	Nil	Nil	Nil

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET
DEPARTMENT OF EEE
(C.EEE) 3. Details of Papers Presented/ published in Proceedings of the Conference with ISBN. From July 2025 to June 2026

S.NO	Name of the Authors	Title of the Paper /Book	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place/Publisher name and place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	**Syed Rubeena Bi**, Ramireddy Harini, Gavala Kedharnath, Jorige Lakshmi, Kuraku Ajay **(5)**	Maximizing switching utilization for fast Battery charging in light electric vehicles	Conference	International conference on intelligent systems for a sustainable future(ISSF 2026)	SVSVMV,Kanchi puram,India	16-Jun-26	International	978-94-6239-693-7	https://doi.org/10.2991/978-94-6239-693-7_65	NA	NA	NA	NA	NA
2	**P. Gopi**, Lokesh Royal.Kanthuri, Nithin Reddy. Konreddy, Sai Joshna. Balla and Madhu priya.Kothapalli **(6)**	A Human-Centric IoT-Based Transformer Safety System with Proximity Detection, Fault Monitoring and Inductive Discharge Protection	Conference	2026 1st International Conference on Artificial Intelligence & Machine Learning in Communication and Power Systems (AIMLCPS)	Berhampur, India	08-Jun-26	International	979-8-3315-5920-5	https://doi.org/10.1109/AIMLCPS68702.2026.11542332	Scopus	NA	NA	NA	NA
3	**J.Sreeranganayakulu**,A. Suresh Kumar,**M. Padma Lalitha**,Nimay Chandra Giri,Olena Rubanenko,Oleksander Rubanenko **(6)**	Remission of Torque Pulsations in Power System Using UPFC Including PI and Fuzzy Controllers	Conference	2026 IEEE 9th International Conference on Energy Smart Systems (ESS)	Kyiv, Ukraine	01-Jun-26	International	979-8-3195-4201-4	https://doi.org/10.1109/ESS70338.2026.11536718	Scopus	NA	NA	NA	NA
4	**B. Anil Kumar** and A. Mogili **(2)**	Performance Enhancement of Multi-Area System through RDA-Tuned Fractional Order Controller	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	Hyderabad, India	05-May-26	International	979-8-3315-8997-4	https://doi:10.1109/ICoECIT68303.2026.11497489	Scopus	NA	NA	NA	NA
5	N. A. Reddy, Y. B. Kumar, S. D. Bharatula and **P. Bhaskara Prasad (4)**	Intelligent Rail Safe Rover for Real-Time Crack and Obstacle Detection on Railway Tracks	Conference	2026 Contemporary Computing Innovations Conference (CCIC), Tirupati,	Tirupati, India	30-Apr-26	International	979-8-3195-2966-4	https://doi.org/10.1109/CCIC68129.2026.11486053.	Scopus	NA	NA	NA	NA
6	**G. M. Subahan**, P. Sneha, P. V. Sai, B. Venkata Chandrika and D. S. Prakash **(5)**	Enhanced Reactive Power Compensation and Voltage Regulation in Power System Using ANN-Controlled Static VAR Compensator	Conference	2026 IEEE International Conference for Convergence in Computing Technology (I3CTCON)	Lonavala, India	14-Mar-26	International	979-8-3315-7656-1	https://doi:10.1109/I3CTCON68242.2026.11507805	Scopus	NA	NA	NA	NA

7	Praveen Kumar Reddy.K,**Bala Chennaiah.P (2)**	Implementation of Multi Agent Systems and Script Based Control Strategies for Energy Management of Solar -Wind Based Microgrid	Conference	2026 Second International Conference on Multi-Agent Systems for Collaborative Intelligence (ICMSCI)	Erode, India	13-Apr-26	International	979-8-3315-6898-6	https://doi.org/10.1109/ICMSCI67830.2026.11469186	Scopus	NA	NA	NA	NA
8	Thomas Thangam, M Tamilarasi, K Barathi, P Malathi, K Sarmila Har Beagam, **K Harinath Reddy (6)**	A Novel Coupled-Inductor-Based Interleaved Boost Converter for Electric Vehicles	Conference	Proceedings of International Conference on Power Electronics and Renewable Energy Systems: ICPERES 2024	Chennai, India	11-Feb-26	International	978-981-95-0207-3	https://doi.org/10.1007/978-981-95-0207-3_27	Scopus	NA	https://www.scopus.com/pages/publications/105030544943?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Z9ewT20AAAAJ&sortby=pubdate&citation_for_vi	NA
9	Nirmala,Revathi S,Jayashree Ananth S,Suchithra B,**Vijaya Bhaskar K**,Keerthana N V **(6)**	Advancing a Hybridized Fusion-Based Neural Network Model for Rapid Screening of Parkinson's Disease	Conference	2025 International Conference on Digital Innovations for Sustainable Solutions (ICDISS)	Faridabad, India	12-Jan-26	International	979-8-3315-5641-9	https://doi.org/10.1109/ICDISS68238.2025.11320586	Scopus	NA	NA	NA	NA
10	C. H. Basha, N. Dharavat, **S. V. Reddy**, M. Padmakar Mohire, K. S. Datta and I. L. Tejashwini **(6)**	Interleaved and Switching Capacitor Hybrid DC-DC Circuit for Future Hybrid Electric Vehicles: An Experimentation Analysis	Conference	2026 International Conference on Electric Power and Renewable Energy (EPREC),	Durg, India	02-Jan-26	International	979-8-3315-7204-4	https://doi: 10.1109/EPREC66546.2026.11411968.	Scopus	NA	NA	https://scholar.google.co.in/citations?hl=en&user=UfsP4mIAAAAJ&view_op=list_works&sortby=pubdate	NA
11	C. H. Basha, N. Dharavat, **S. V. Reddy**, F. Fathima, M. S. Reddy and H. Rasala **(6)**	A Novel H2 Source Polymer Material Fuel Stack for Electric Vehicles with MPFNN, P&O, and IC Controllers: A Critical Analysis,	Conference	2026 International Conference on Electric Power and Renewable Energy (EPREC),	Durg, India	02-Jan-26	International	979-8-3315-7204-4	https://doi.org/10.1109/EPREC66546.2026.11412103	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=UfsP4mIAAAAJ&sortby=pubdate&citation_for_view=UfsP4mIAAAAJ:blknAaTinK	NA
12	C. H. Basha, S. Resmara, **S. V. Reddy** and F. Fathima **(4)**	A Novel Improvement of Wind Power Supply by Using the RBFN Algorithm	Conference	2025 International Conference on Power Electronics and Energy (ICPEE)	Bhubaneswar, India.	14-Dec-25	International	979-8-3315-6637-1	https://doi: 10.1109/ICPEE65973.2025.11410974	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=UfsP4mIAAAAJ&sortby=pubdate&citation_for_view=UfsP4mIAAAAJ:M3NEmzR	NA
13	S. Resmara, C. H. Basha, **S. V. Reddy** and F. Fathima **(4)**	A Novel Improved Adaptive Network-Fuzzy Inference System Approach for Effective Battery Charging Control	Conference	2025 International Conference on Power Electronics and Energy (ICPEE)	Bhubaneswar, India.	14-Dec-25	International	979-8-3315-6637-1	https://doi: 10.1109/ICPEE65973.2025.11411357	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=UfsP4mIAAAAJ&sortby=pubdate&citation_for_view=UfsP4mIAAAAJ:M3NEmzR	NA

14	C. H. Basha, P. Sadanandam, N. Dharavat, **S. V. Reddy**, K. S. Datta and I. L. Tejashwini(6)	A Novel Rao MPPT Controller for PV Battery Charging-fed Electric Vehicles	Conference	2025 IEEE 1st International Conference on Recent Trends in Computing and Smart Mobility (RCSM)	Bhopal, India	05-Dec-25	International	979-8-3315-9126-7	https://doi.org/10.1109/RCSM67767.2025.11507372.	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=UfsP4mIAAAAJ&sortby=pubdate&citation_for_view	NA
15	D. Manoj, F. T. Josh, B. P. V and **M. Swathi (4)**	Scalable and Efficient Solution for EV based-Lithium-Ion Battery SOH Estimation through a Novel CatBoost-Enhanced Predictive Analytics	Conference	2025 IEEE 1st International Conference on Recent Trends in Computing and Smart Mobility (RCSM)	Bhopal, India	05-Dec-25	International	979-8-3315-9126-7	https://doi.org/10.1109/RCSM67767.2025.11507640.	Scopus	NA	NA	NA	NA
16	V.Suryanarayanareddy, **Arun Kumar.Thulasi**, P. Dhanaselvi, B. H. Kumar, P. Vishnuvardhan and E. Parimalasindar **(6)**	Optimized Bidirectional Dual-Input Single-Output DC-DC Converter for Enhanced Electric Vehicle Integration	Conference	2025 IEEE 4th International Conference on Smart Technologies for Power, Energy and Control (STPEC)	Goa, India	10-Dec-25	International	979-8-3315-9806-8	https://doi.org/10.1109/STPEC66316.2025.11490837.	Scopus	NA	NA	NA	NA
17	**S. Sarada, Ganesh Challa**, Manoj kumar Debnath, Jahnavi Palepu, Ayushi Jain. Sancheti and R. Haritha **(6)**	Three-Phase Switched-Capacitor Five-Level Inverter for Electric Vehicle Application	Conference	2025 IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (SEFET)	Jaipur, India	02-Dec-25	International	979-8-3315-3544-5	https://doi.org/10.1109/SEFET65155.2025.11255269	Scopus	NA	https://www.scopus.com/pages/publications/105030329573?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Ipisj_YAAAAJ&sortby=pubdate&citation_for_view=Ipisj_YAAAA	NA
18	Sasikala S, Sita Devi Bharatula, **P. Bhaskara Prasad (3)**	Digital Twin for Predictive Modelling in Smart Farming based on Ensemble Neural Network Algorithm	Conference	2025 IEEE International Conference on Emerging Trends in Computing and Communication (ETCOM)	SDM Institute of Technology, Ujare,Karnataka,India	29-Nov-25	International	979-8-3315-8508-2	https://doi.org/10.1109/ETCOM66606.2025.11437117	Scopus	NA	https://www.scopus.com/pages/publications/105037344044?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=UYK5joIAAAAJ&sortby=pubdate&citation_for_view=UYK5joIA	NA
19	**S. Sarada, Ganesh Challa**, N. Ravi Sankara Reddy, and P. Yamuna **(4)**	Model Predictive Control of grid connected 25 level inverter	Conference	7th International Conference on Communications and Cyber Physical Engineering (Lecture notes in electrical engineering)	Hyderabad, India	19-Nov-25	International	978-981-95-0269-1	https://doi.org/10.1007/978-981-95-0269-1_217	Scopus	NA	https://www.scopus.com/pages/publications/105023274790?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Tju1oxEAAAAJ&sortby=pubdate&citation_for_view=Tju1oxEAAAAJ:r0BpntZqJG4C	NA
20	Sujatha. B. G, **N. C. Alluraiah,** Soumya Mishra, **K. Harinathreddy**, Harsha vardhan Kumar. Pujari and V. Nandagopal **(6)**	Innovative Thermoelectric Generator for Sustainable Energy Harvesting	Conference	2025 9th International Conference on Inventive Systems and Control (ICISC)	Coimbatore, India	13-Oct-25	International	979-8-3315-1247-7	https://doi.org/10.1109/ICISC65841.2025.11188116.	Scopus	NA	https://www.scopus.com/pages/publications/105020936226?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Innovative+Thermoelectric+Generator+for+Sustainable+Energy+Harvesting&btnG=	NA

21	**S. Venkateswarlu Reddy, P. Gopi**, C. H. Basha, J. S. Naik, Y. V. Kalyani and A. R. Mogili **(6)**	Integrated PMU and UPFC Approach for Dynamic Monitoring and Control of Voltage Stability	Conference	2025 Innovations in Power and Advanced Computing Technologies (i-PACT)	Surabaya, Indonesia	25-Sep-25	International	979-8-3315-7373-7	https://doi: 10.1109/i-PACT65952.2025.11307826	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=UfsP4mIAAAAJ&sortby=pubdate&citation_for_view=UfsP4mIAAAAJ:isC4tDSrTZIC	NA
22	**S. V. Reddy, P. Gopi**, C. H. Basha, F. Shaik, J. S. Naik and G. Vyshnavi **(6)**	Enhancing Disabled Mobility and Health Safety Through Iot-Integrated Smart Wheelchairs	Conference	2025 Innovations in Power and Advanced Computing Technologies (i-PACT)	Surabaya, Indonesia	25-Sep-25	International	979-8-3315-7373-7	https://doi: 10.1109/i-PACT65952.2025.11307871	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=UfsP4mIAAAAJ&sortby=pubdate&citation_for_view	NA
23	**J. Sree Ranganayakulu(1)**	Dual Active Bridge Converter Design and Control for Grid-Tied Inverter,	Conference	2025 6th International Conference on Electronics and Sustainable Communication Systems (ICESC)	Coimbatore, India	12-Sep-25	International	979-8-3315-5503-0	https://doi: 10.1109/ICESC65114.2025.11212545	Scopus	NA	https://www.scopus.com/pages/publications/105022605838?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=dCzKxdQAAAAJ&sortby=pubdate&citation_for_vi	NA
24	**O. Hemakesavulu**, N. S. Rao, G. Srinivas, U. Narender, **M. P. Lalitha** and **S. V. Reddy (6)**	IoT Based Preservative System for Food Grade Item Using PV Technique	Conference	2025 13th International Conference on Smart Grid (icSmartGrid)	Glasgow, United Kingdom	28-Jul-25	International	979-8-3315-2557-6	https://doi.org/10.1109/icSmartGrid66138.2025.11071719	Scopus	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=GkG4TqoAAAAJ&s	NA
25	**Padma Lalita M**; **Hemakesavulu O**; Netaji Subhash P; Pavan Kumar K; Naveen K; Naveen K **(6)**	Prediction of Solar Power Using Machine Learning – Annamacharya University Case Study,	Conference	2025 13th International Conference on Smart Grid (icSmartGrid)	Glasgow, United Kingdom	28-Jul-25	International	979-8-3315-2557-6	https://doi.org/10.1109/icSmartGrid66138.2025.11071719	Scopus	NA	NA	scholar.google.co.in/citations?view_op=view_citation&hl=en&user=GkG4TqoAAAAJ&sortby=	NA
26	**Baya Reddy Lomada**; V Naga Bhaskar Reddy; Ganga Geethika; Poli Charitha Reddy; Bogasamudram Damodhar Reddy; Kolavala Bhanu Prakash Reddy **(6)**	A Multi Port Power Converter for Electric Vehicle Applications	Conference	2025 13th International Conference on Smart Grid (icSmartGrid)	Glasgow, United Kingdom	28-Jul-25	International	979-8-3315-2557-6	https://doi.org/10.1109/icSmartGrid66138.2025.11071719	Scopus	NA	NA	scholar.google.co.in/citations?view_op=view_citation&hl=en&user=GkG4TqoAAAAJ&sortby=pubdate&citation_for_view=GkG4TqoAAAAJ:tkaPQYYpVKo	NA
27	**S. Sarada, Ganesh Challa**, K. Sreelatha, T. Amrutha, S. G. Naik and M. Sumanth, **(6)**	An Enhanced Low Switching Frequency Modulation-Based Symmetric Multi-Level Inverter for Harmonic Mitigation	Conference	2025 International Conference in Advances in Power, Signal, and Information Technology (APSIT),	Bhubaneswar, India,	25-May-25	International	979-8-3315-2989-5	https://doi: 10.1109/APSIT63993.2025.11086284,	Scopus	NA	https://www.scopus.com/pages/publications/105013071680?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Tju1oxEAAAAJ&sortby=pubdate&citation_for_view=Tju1oxEAAAAJ:R3hNpaxXUhUC	NA
28	**S. Sarada, Ganesh Challa,** C. Pallavi, G. M. Prabhanjali, R. Nandini and B. S. Charan, **(5)**	MPC Based Grid-Connected Three-Phase Switched-Capacitor Nine-Level Inverter	Conference	2025 IEEE International Conference on Computer, Electronics, Electrical Engineering & their Applications (IC2E3),	Srinagar Garhwal, India	16-May-25	International	979-8-3315-2439-5	https://doi: 10.1109/IC2E365635.2025.11166921	Scopus	NA	https://www.scopus.com/pages/publications/105018461708?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Tju1oxEAAAAJ&sortby=pubdate&citation_for_view=Tju1oxEAAAAJ:_Qo2XoVZTnwC	NA

29	**Ganesh Challa, S. Sarada**, L. Vishnu Vardhan Reddy, K. Sudeepthi, S. Yusuf and K. Sujitha, **(6)**	DQN Based Grid-Connected Single-Phase Inverter	Conference	2025 IEEE International Conference on Computer, Electronics, Electrical Engineering & their Applications (IC2E3),	Srinagar Garhwal, India	16-May-25	International	979-8-3315-2439-5	https://doi: 10.1109/IC2E365635.2025.11167873	Scopus	NA	https://www.scopus.com/pages/publications/105018460411?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Tju1oxEAAAAJ&sortby=pubdate&citation_for_view=Tju1oxEAAAAJ:e5wmG9Sq2KIC	NA
30	**N. Sreeramula Reddy**, N. Muraly, B. Ankitha Sravani, I. Kumaraswamy and P. Chandrika **(5)**	Advanced Pathways in Electrical, Communication, and Automation Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	Book Chapter	IoT Based LPG Gas Level Detection and Sensor Alert System (E-Mail/SMS) 286	CRC Press, Londen	05-12-2026	International	9781041302971	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003773962-42/iot-based-lpg-gas-level-detection-sensor-alert-system-mail-sms-sreeramula-reddy-muraly-ankitha-sravani-kumaraswamy-chandrika?context=ubx&refId=3b6018a8-bc8c-48b5-8166-2f6832ea2007	**Not yet indexed**	NA	NA	NA	42
31	**P. Balachennaiah, M. Padma Lalitha, S.** Kalimulla, Manikanta S. Rishendra, M. Pavankalyan **(6)**	Advanced Pathways in Electrical, Communication, and Automation Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	Book Chapter	Analysis and Design of Fixed-Frequency Control for Solar Applications using Phase-Shift Full-Bridge (PSFB) Resonant Power Converter	CRC Press, Londen	05-12-2026	International	9781003773962	https://doi.org/10.1201/9781003773962	**Not yet indexed**	NA	NA	NA	37
32	**J Sreeranganayakulu, A Suresh Kumar (2)**	Challenges and Opportunities in Artificial Intelligence	Book Chapter	**Comparison of torque pulsations mitigation in power system using PI and fuzzy controllers with UPFC and SSSC**	CRC Press, Londen	28/4/2026	International	9781003781196	https://doi.org/10.1201/9781003781196	Scopus	NA	NA	NA	NA
33	**Baya Reddy Lomada, B. Sreenivasulu, Anwar Bhasha Pattan, Mudassir Khan, Shaik Karimullah (5)**	Integration of Internet of Things and Machine Learning	Book Chapter	Intelligent Blood Bank Management Using Internet of Things for Enhanced Healthcare Delivery	CRC Press, Londen	19/2/2026	International	9781003634768	https://doi.org/10.1201/9781003634768	Scopus	NA	NA	NA	
34	**Arun Kumar Thulasi**, V. Suryanarayana Reddy, P. Dhana Selvi, G. V. Narayana and Gayathri Pedda **(5)**	Advanced Pathways in Electrical, Communication, and Automation Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	Book Chapter	. Sustainable Microgrid Operations through Renewable Energy and Electric Vehicle Integration Using MPPT Techniques	CRC Press, Londen	05-12-2026	International	9781041302971		Not yet indexed	NA	NA	NA	44
35	**P.Balachennaiah, Padma Lalitha**, S. Varalakshmi, K. Vasudeva Reddy, L.Tejasri and B. Soma Sekhar **(6)**	Advanced Pathways in Electrical, Communication, and Automation Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	Book Chapter	IoT Cloud-Based Smart Metering System for Dynamic Energy Consumption Analysis	CRC Press, Londen	05-12-2026	International	9781041302971		Not yet indexed	NA	NA	NA	38
36	**M. Sai Sandeep**, N. Muraly, G. Balakrishna, I. Kumaraswamy and M. Pala Prasad Reddy **(5)**	Advanced Pathways in Electrical, Communication, and Automation Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	Book Chapter	Design and Fabrication of Solar Powered E-bike for Sustainable Green Transportation	CRC Press, Londen	05-12-2026	International	9781041302971		Not yet indexed	NA	NA	NA	36

37	**Matham Ramesh**, G. Veera Kesava Reddy, K. Mukesh, P. Subhash, B. Vamsi Yaswanth **(5)**	Synergies in Smart and Virtual Systems Using Computational Intelligence	Book Chapter	Comparative performance evaluation of RSMLI for PV application	Taylor & Francis	22-Oct-25	International	9781003685364	https://doi.org/10.1201/9781003685364-90	Scopus	NA	https://www.scopus.com/pages/publications/105024930291?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Comparative+performance+evaluation+of+RSMLI+for+PV+application&btnG=	90
38	**M. Swetha**, K. Susmitha, C. Sairam, V. VenkataTeja, B. Sravani **(5)**	Synergies in Smart and Virtual Systems Using Computational Intelligence	Book Chapter	Design and simulation of dual active bridge converter for EV battery charging applications	Taylor & Francis	22-Oct-25	International	9781003685364	https://doi.org/10.1201/9781003685364-90	Scopus	NA	NA	NA	66
39	**Bi. Syed Rubeena**, K. Jeevana Rekha, K. Govardhan Reddy, D. Dileep Kumar, J. Deva Nandini **(6)**	Advancing Innovation through AI and Machine Learning Algorithms	Book Chapter	Dual source novel nine level inverter design with trinary geometric DC links to produce highest output voltage levels	CRC Press, Londen	10-Oct-25	International	9781003684589	https://doi.org/10.1201/9781003684589	Scopus	NA	NA	NA	24
40	**Nallolla Chinna Alluraiah**, M. Ahamad Basha, K. Hariharan, K. Jaswanthi, Y. Harish, Mohammad Taufiqul Arif **(6)**	Sustainable Electrical Engineering and Intelligent Systems	Book Chapter	Implementation of neural network controller for grid connected wind-solar PV charging station	Taylor & Francis	10-Sep-25	International	9781003643142	https://doi.org/10.1201/9781003643142	Not yet indexed	NA	NA	NA	16
41	**Nallolla Chinna Alluraiah**, L. Maheswara Reddy, I. Vishnu Vardhan, B Prabhas, Mohammad Taufiqul Arif **(5)**	Sustainable Electrical Engineering and Intelligent Systems	Book Chapter	Optimizing solar system performance with IOT and predictive maintenance techniques	Taylor & Francis	10-Sep-25	International	9781003643142	https://doi.org/10.1201/9781003643142	Not yet indexed	NA	NA	NA	9
42	**Boothapati Anil Kumar, K. Manoj, P. Vasudha, M. Sana Fathima, M. Vinod Kumar (5)**	Sustainable Electrical Engineering and Intelligent Systems	Book Chapter	Intelligent harmonic mitigation and power quality improvement in a microgrid with a unified power flow controller (UPFC) for grid-connected and islanded operations	Taylor & Francis	10-Sep-25	International	9781003643142	https://doi.org/10.1201/9781003643142	Not yet indexed	NA	NA	NA	NA
43	**Suresh Babu Palepu**, Vijaya Gangadhar Reddy Boreddy, Hema Sainath Reddy Chimala, Vilasith Das David, Vinay Chakali, Md Enamul Haque **(6)**	Sustainable Electrical Engineering and Intelligent Systems	Book Chapter	Multi-objective ant nesting algorithm strategy for phasor measuring unit placement that maximizes power system state estimation	CRC Press, Londen	10-Sep-25	International	9781003643142	https://doi.org/10.1201/9781003643142	Scopus	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=iGK0AlwAAAAJ&sortby=pubdate&citation_for_view=iGK0AlwAAAAJ:yD5IFk8b50cC	NA
44	**Suresh Babu Palepu**, Akhila Yatham, Jahnavi Pattur, Hari Kothapalli, Ashok Gundlapalli, Md. Enamul Haque(6)	Sustainable Electrical Engineering and Intelligent Systems	Book Chapter	Optimal PMU placement for power system observability considering voltage stability constraints using artificial protozoa optimizer algorithm	CRC Press, Londen	10-Sep-25	International	9781003643142	https://doi.org/10.1201/9781003643142	Scopus	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=iGK0AlwAAAAJ&sortby=pubdate&citation_for_view=iGK0AlwAAAAJ:cFH56HbyZ2cC	NA

45	Pujari Harish Kumar, **N. Chinna Alluraiah**, Kumar P. Sunil, Soumya Mishra, K. G. Nagraja, G. Rashmi (7)	Power Energy and Secure Smart Technologies	Book Chapter	Techno-Economic Analysis and Optimization of an Off-Grid Hybrid Systems for Sustainable Energy Solutions	CRC Press, Londen	16-Jul-25	International	9781003661917	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003661917-22/techno-economic-analysis-optimization-grid-hybrid-systems-sustainable-energy-solutions-pujari-harish-kumar-chinna-alluraiah-kumar-sunil-soumya-mishra-nagraja-rashmi?context=ubx	Scopus	NA	https://www.scopus.com/pages/publications/105022548876?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Techno-Economic+Analysis+and+Optimization+of+an+Off-Grid+Hybrid+Systems+for+Sustainable+Energy+Solutions&btnG=	22

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET
Department of Mechanical Engineering
(b.ME) 2. Details of Conference Proceedings published with ISSN from 01/07/2025 to 30/06/2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume & Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/ International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	Rakesh Dubey, Ch. Sreenivasa Rao, Hariprasad Tarigonda, **B. Venkatesh**, Saurabh Sharma, Ravi Kant Singh, Rajeev Kumar, R. Jyothu Naik **(8)**	ME	Performance and emission profiles of CI engine with aluminium oxide-reinforced polymer composite in biodiesel blends	2nd International Conference on Sustainable Materials and Technologies (ICSMT 2025)	Universitat Rovira i Virgili	03-04-2025 to 04-04-2025	Tarragona, Spain	3045(1)	1 to 13	07-2025	International	1742-6588	SCOPUS	https://doi.org/10.1088/1742-6596/3045/1/012012	-	https://www.scopus.com/pages/publications/105011274414?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Performance+and+emission+profiles+of+CI+engine+with+aluminium+oxide-reinforced+polymer+composite+in+biodiesel+blends
2	**Dr. Kishorekumar Nandyala**, Kishorekumar, **Durga Bhavani G.I.K.**, Syed, Zuriah,Priya, Anthani Kamala, Yelamasetti, BalramNandyala **(6)**	ME & CSE	Effect of TiO_2, BN, and WC Nano-Reinforcement on the Mechanical and Tribological Performance Al7075 Hybrid Composites	3rd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2025)	ICISPES-2025	18-12-2025 to 19-12-2025	Dayananda Sagar College of Engineering, Bengaluru	692	01 to 10	02-2026	International	2267-1242	SCOPUS	10.1051/e3sconf/202669204008	-	https://www.scopus.com/pages/publications/105030478170?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=9E3EYC0AAAAJ&citation_for_view=9E3EYC0AAAAJ:Y0pCki6q_DkC
	Note: Entries are arranged																

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DEPARTMENT OF MECHANICAL ENGINEERING

(C.ME) 3. Details of Papers Presented/Published in Proceedings of the Conference/Book Chapter with ISBN from 01/07/2025 to 30/06/2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	ce/ publication	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	Dr. A. Hemantha Kumar **(1)**	Privacy Preserving Federated Deep Learning for Multi-Class Attack Detection in Industrial IoT	Proceedings of the Conference	4th International Conference on Augmented Intelligence and Sustainable Systems (ICAISS-2026)	CARE College of Engineering, Tiruchirappalli , Tamil Nadu, India	28-04-2026	International	ISBN: 979-8-3315-9233-2	-	IEEE Conference	-	-	-	NA
2	Ramanjaneyulu C **(1)**	CFD Study of PCM and Composite PCM–Based Thermal Management for Lithium-Ion Batteries	Proceedings of the Conference	International Conference on Advances in Green, Net-Zero Innovation – Sustainability (AGNI-S 2026)	Department of Energy and Environment, National Institute of Technology Tiruchirappalli, India	15-04-2026	International	-	-	-	-	-	-	NA
3	**Dr. A. Hemantha Kumar, Nunna Keerthi** (2)	Multi-Objective Optimization of Mechanical and Corrosion Performance of AL7175-$BaSO_4$-WC-Al_2O_3 Hybrid Composites via Taguchi-Grey Relational Analysis	Proceedings of the Conference	ICEISD 2026	CBIT, Proddatur	10-04-2026	International	-	-	Scopus	-	-	-	NA

4	**N. Deepthi (1)**	Experimental Study on Corrosion Rate and Mechanical Strength of Wire EDM-Machined Inconel 718 Alloy	Proceedings of the Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur, Andhra Pradesh, India	10-04-2026	International	-	-	Scopus	-	-	-	NA
5	Venkatesh Vakucherla	Novel Approach for Design of Autonomous Multi-Robot Networks with Efficient Deployment and Obstacle Avoidance in Unknown Environments	Proceedings of the Conference	International Conference on Electronic Systems and Intelligent Computing (ICESIC 2026)	Department of Electronics and Communication Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology	13-03-2026	International	Electronic ISBN: 979-8-3195-2017-3; Print ISBN: 979-8-3195-2018-0	https://doi.org/10.1109/ICESIC67389.2026.11496603	Google Scholar	-	-	https://ieeexplore.ieee.org/abstract/document/11496603	NA
6	Siddhartha Dan, Padmanava Mishra, **Venkatesh Vakucherla**, Mahesh Kumar Sah **(4)**	Customized Biomaterials Architecture with Additive Manufacturing for Tissue Regeneration	Book Chapter	Digital Manufacturing of Bioimplants: Technology and Applications	CRC Press	17-02-2026	International	-	-	Under Press	-	-	-	Chapter 6
7	**B. Venkatesh, D.J. Samatha Naidu,** A.V. Senthil Kumar **(3)**	Safety and Reliability in Autonomous Vehicles	Book Chapter	Artificial Intelligence for Autonomous Vehicles and Driver Assistance Systems	CRC Press, Boca Raton, USA	18-11-2025	International	eISBN: 9781003519423	https://doi.org/10.1201/9781003519423	SCOPUS	-	https://www.scopus.com/pages/publications/105023804779?origin=resultslist	-	Chapter 2

8	Chinthakunta Siva Reddy, **P. Veera Sanjeeva Kumar (2)**	Effect of Rotational Speed on Microstructural Evolution and Mechanical Behavior of AA2024-Brass Composites Processed by Friction Stir Processing	Book Chapter	Applications of AI in Smart Technologies and Manufacturing	CRC Press	14-10-2025	International	-	https://doi.org/10.1201/9781003602453	Under Press	-	-	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003602453-32/effect-rotational-speed-microstructural-evolution-mechanical-behavior-aa2024-brass-composites-processed-friction-stir-processing-chinthakunta-siva-reddy-veera-sanjeeva-kumar	-
9	Shaik Salma Begum, **Suresh Babu G**, Senthil Mahesh P. C., Ankita Bhaumik, Saptarsi Sanyal, **S. Fayaz Begum (6)**	Deep X Detect: Real-Time Sandbox Malware Detection with Explainable AI	Proceedings of the Conference	6th International Conference on Computing Science, Communication and Security (COMS2)	Ganpat University, Gujarat, India	12-09-2025	International	ISSN 1865-0929	10.1007/978-3-032-16038-6_9	SCOPUS	-	https://www.scopus.com/pages/publications/105031415547?origin=resultslist	-	NA
10	**A. Hemantha Kumar, P. Veera Sanjeeva Kumar, R. Madhan Mohan (3)**	Enhancement of Cycle Boundaries in Wire Electrical Discharge Machining (WEDM)	Book Chapter	Sustainable Blind Quantum Computing	De Gruyter Brill	01-08-2025	International	ISSN: 2940-0112	https://doi.org/10.1515/9783111264349-013	SCOPUS	-	https://www.scopus.com/pages/publications/105038206752?origin=resultslist	-	Chapter 13

11	T. Manimohan (1)	Design and Performance of a Vortex Tube Configuration by Delrin Metal	Proceedings of the Conference	Computational Techniques and Smart Manufacturing (ICCTSN 2025)	Department of Mechanical Engineering, VEMU Institute of Technology (Autonomous) , Chittoor, Andhra Pradesh, India	18-07-2025	International	ISBN: 978-1-041-15465-5	https://doi.org/10.1201/9781003679622	Google Scholar	-	-	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003679622-23/design-performance-vortex-tube-configuration-delrin-metal-ramesh-ganugapenta-hemadri-sudarshanam-ganta-suresh-rajendra-prasad-mani-mohan	NA
12	S. Mahaboob Khan	Optimization Process Parameters for In-Situ Metal Matrix Composites AA6061-AlN	Proceedings of the Conference	Computational Techniques and Smart Manufacturing (ICCTSN 2025)	Department of Mechanical Engineering, VEMU Institute of Technology (Autonomous) , Chittoor, Andhra Pradesh, India	18-07-2025	International	ISBN: 978-1-041-15465-5	https://doi.org/10.1201/9781003679622	Google Scholar	-	-	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003679622-19/optimization-process-parameters-situ-metal-matrix-composites-aa6061-aln-rao-anjan-kumar-reddy-venkatesulu-ramesh-ganugapenta-devarajulu-reddy-mahaboob-khan	NA

13	Dr. B. Venkatesh (1)	Experimental Evaluation of Self-Healing Concrete: Strength Enhancement and Microstructural Characterization	Proceedings of the Conference	Computational Techniques and Smart Manufacturing (ICCTSN 2025)	Department of Mechanical Engineering, VEMU Institute of Technology (Autonomous), Chittoor, Andhra Pradesh, India	18-07-2025	International	ISBN: 978-1-041-15465-5	https://doi.org/10.1201/9781003679622	Google Scholar	-	-	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003679622-4/experimental-evaluation-self-healing-concrete-strength-enhancement-microstructural-characterization-mohan-babu-ningampalli-ramanjaneyulu-bodevenkata-kavyatheja-smitha-suguna-leela-cholker-arvind-kumar-venkatesh	NA
14	G. Eswar Balachandar (1)	Sustainable Development of Ternary Blended Concrete: Experimental Study on Strength and Durability Characteristics	Proceedings of the Conference	Computational Techniques and Smart Manufacturing (ICCTSN 2025)	Department of Mechanical Engineering, VEMU Institute of Technology (Autonomous), Chittoor, Andhra Pradesh, India	18-07-2025	International	ISBN: 978-1-041-15465-5	https://doi.org/10.1201/9781003679622	Google Scholar	-	-	https://www.taylorfrancis.com/chapters/edit/10.1201/9781003679622-3/sustainable-development-ternary-blended-concrete-experimental-study-strength-durability-characteristics-damodhara-reddy-jagadeesh-bommisetty-bodevenkata-kavyatheja-hari-prasad-reddy-eswar-balachandar-divya-vani	NA

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Department of ELECTRONICS AND COMMUNICATION ENGINEERING
(b.ECE) 2. Details of Conference Proceddings published with ISSN July 2025 to June 2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume & Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/ International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	I. Venkatarameswar Reddy; J. **Chinna Babu (1)**	ECE	Performance Optimization of Cylindrical Gate-All-Around FETs Through Gate Workfunction Engineering	2026 9th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech)	Institute of Engineering & Management,	06-02-2026 TO 08-02-2026	Kolkata	–	01 to 06	08-03-2026	International	2767-9934 or 979-8-3315-6339-4	SCOPUS	https://doi.org/10.1109/IEMENTech202669403.2026.11434009	NA	https://doi.org/10.1109/IEMENTech202669403.2026.11434009	https://doi.org/10.1109/IEMENTech202669403.2026.11434009
2	**Y. Pavan Kumar Reddy, K. Shankar, Y. Sunanda, M. Ravi Kishore,** K. Raj Mohan **(5)**	ECE	IOT Based Smart Home Using Alexa	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering(Lecture Notes in Electrical Engineering)	G Narayanamma Institute of Technology & Science in	28-02-2026 TO 29-02-2026	Hyderabad, India.	1466	800-805	09-11-2025	International	1876-1100 or 978-981-95-0268-4	SCOPUS	https://doi.org/10.1007/978-981-95-0269-1_91?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle	NA	https://doi.org/10.1007/978-981-95-0269-1_91?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle	https://doi.org/10.1007/978-981-95-0269-1_91?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle

3	K. Shankar **Y. Sunanda,** K. MadhaviPriya, **Y. Pavan Kumar Reddy** **M. Ravikishore** **K. Chandrahasa Reddy (6)**	ECE	Distribution and Transmission Line Security Monitoring and Protection System	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering(Lecture Notes in Electrical Engineering)	G Narayanamma Institute of Technology & Science in Hyderabad, India.	28-02-2026 TO 29-02-2026	Hyderabad, India.	–	844-850	09-11-2025	International	1876-1100 or 978-981-95-0268-4	SCOPUS	10.1007/978-981-95-0269-1_96	NA	10.1007/978-981-95-0269-1_96	10.1007/978-981-95-0269-1_96
4	K. Shankar **M. Ravi Kishore** **Y. Pavan Kumar Reddy** S. Gnanamurugan **Y. Sunanda** R. Mahesh Kumar **(6)**	ECE	Advancements in Image Dehazing: Enhanced Techniques with Non-uniform Atmospheric Light, Improved Dark Channel Prior, and Combined Window Filter	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering(Lecture Notes in Electrical Engineering)	G Narayanamma Institute of Technology & Science in Hyderabad, India.	28-02-2026 TO 29-02-2026	Hyderabad, India.	1466	806-811	09-11-2025	International	1876-1100 or 978-981-95-0268-4	SCOPUS	10.1007/978-981-95-0269-1_92	NA	10.1007/978-981-95-0269-1_92	10.1007/978-981-95-0269-1_92
5	**K. Chandrahasa Reddy** **Y. Pavan Kumar Reddy** **Y. Sunanda** K. Shankar **M. Ravi Kishore (5)**	ECE	ECG Arrhythmia Classification Through Synergy of Pattern and Machine Learning with Fisher's Criterion	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering(Lecture Notes in Electrical Engineering)	G Narayanamma Institute of Technology & Science in Hyderabad, India.	28-02-2026 TO 29-02-2026	Hyderabad, India.	1466	678-683	09-11-2025	International	1876-1100 or 978-981-95-0268-4	SCOPUS	10.1007/978-981-95-0269-1_77	NA	10.1007/978-981-95-0269-1_77	10.1007/978-981-95-0269-1_77

6	**M. Ravi Kishore** K. Shankar K. Rajmohan **Y. Pavan Kumar Reddy** **Y. Sunanda (5)**	ECE	Robust Fusion of Multimodality Medical Images with Fidelity Driven Optimization and Detail - Preservation	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering(Lecture Notes in Electrical Engineering)	G Narayanamma Institute of Technology & Science in Hyderabad, India.	28-02-2026 TO 29-02-2026	Hyderabad, India.	1466	23-29	09-11-2025	International	1876-1100 or 978-981-95-0268-4	SCOPUS	10.1007/978-981-95-0269-1_3	NA	10.1007/978-981-95-0269-1_3	10.1007/978-981-95-0269-1_3
7	**Y. Sunanda** **Y. Pavan Kumar Reddy** K. Shankar J. Raja Kullayappa **M. Ravi kishore (5)**	ECE	Pioneering Multi-fusion Approach of Enhancing Underwater Image Quality	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering(Lecture Notes in Electrical Engineering)	G Narayanamma Institute of Technology & Science in Hyderabad, India.	28-02-2026 TO 29-02-2026	Hyderabad, India.	1466	615-620	09-11-2025	International	1876-1100 or 978-981-95-0268-4	SCOPUS	10.1007/978-981-95-0269-1_70	NA	10.1007/978-981-95-0269-1_70	10.1007/978-981-95-0269-1_70
8	**Umakanth Basineni; Fahimud din Shaik (2)**	ECE	Detection and Classification of Lung Cancer through Integrated Image Processing and Machine Learning Approaches	2025 6th International Conference for Emerging Technology (INCET)	Jain College of Engineering (JCE),	23-05-2026 TO 25-05-2026	Belagavi.	–	01 to 06	04-09-2025	International	2996-4490 or 979-8-3315-3103-4	SCOPUS	https://doi.org/10.1109/INCET64471.2025.11140165	NA	https://doi.org/10.1109/INCET64471.2025.11140165	https://doi.org/10.1109/INCET64471.2025.11140165

R & D Incharge

Head of the Department

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Department of ELECTRONICS AND COMMUNICATION ENGINEERING

(c.ECE) 3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From July 2025 to June 2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	V. Senthilkumar; **K. Naganarasaiah Goud;** S. Santhoshkumar; P. Dhanush; P. Nivethkumar; K. Pugazhenthi (6)	Artificial Intelligence and Internet of Things Assisted Smart Power Converter for Renewable Energy Systems	Conference	2026 8th International Conference on Inventive Material Science and Applications (ICIMA)	Nammakal.India	19-06-2026	International	979-8-3315-7814-5	https://doi.org/10.1109/ICIMA68728.2026.11564389	NA	NA	NA	NA	NA
2	Prerna Mahajan; Prabhjot Singh; **Jala Himabindhu;** Himanshu Narayan Prasad; D. Jyothi Preshiya; M. V. Subramanyam (6)	U-Net Based Automated Segmentation of Retinal Blood Vessels for Diabetic Retinopathy Screening	Conference	2026 International Conference on Signal, Systems, and Computing for Next-Gen Automation (ICSSCNA)	Eluru, India	09-06-2026	International	979-8-3315-7039-2	https://doi.org/10.1109/ICIMA68728.2026.11564390	NA	NA	NA	NA	NA
3	**Umakanth Basineni; S. Fahimuddin; Shaik Karimullah;** B. Venkata Sai Charan; G.Vishnu Vardhan; S. Swathi (6)	SmartAgri-Net: Intelligent Crop Yield Prediction Using Hybrid Machine Learning Model	Conference	2026 International Conference on Intelligent Computing and Automation for Sustainable Solutions (ICASS)	Manav Rachna University, Faridabad	08-06-2026	International	979-8-3315-5169-8	https://doi.org/10.1109/ICIMA68728.2026.11564391	NA	NA	NA	NA	NA
4	**S. Fayaz Begum;** K.Architha; S.Charan Raj; N.Girieswar Reddy; P.Bhagya Lakshmi; **J.Hima Bindhu (6)**	AutoRDH-Net: A Hybrid Autoencoder–LSTM Model for MRI Brain Tumor Image Analysis	Conference	2026 2nd International Conference on Big Data & Machine Learning (ICBDML)	Bhopal, India	08-06-2026	International	979-8-3195-3091-2	https://doi.org/10.1109/ICIMA68728.2026.11564392	NA	NA	NA	NA	NA
5	**Y. Sunanda; M. Ravi Kishore;** K. Shankar; **Y. Pavan Kumar Reddy; P. Syamala Devi;** P. Mounika (6)	Quaternary Reversible Circuit Optimization for Scalable Multiplexer and Demultiplexer	Conference	2026 1st International Conference on Artificial Intelligence & Machine Learning in Communication and Power Systems (AIMLCPS)	Parala Maharaja Engineering College, Berhampur, Odisha, India.	08-06-2026	International	979-8-3315-5920-5	https://doi.org/10.1109/ICIMA68728.2026.11564393	NA	NA	NA	NA	NA

6	K. Shankar; **Y. Sunanda; Y. Pavan Kumar Reddy; M. Ravi Kishore;** B. GangaDevi; M. Anusha **(6)**	Object Detection and Classification in Images Using YOLO Algorithm	Conference	2026 1st International Conference on Artificial Intelligence & Machine Learning in Communication and Power Systems (AIMLCPS)	Parala Maharaja Engineering College, Berhampur, Odisha, India.	08-06-2026	International	979-8-3195-3091-2	https://doi.org/10.1109/ICIMA68728.2026.11564394	NA	NA	NA	NA	NA
7	**Y. Pavan Kumar Reddy**; K. Shankar; **M. Ravi Kishore; Y. Sunanda; A. Swapna**; K. Shirisha (6)	A Wireless Wearable Communication System for Physically Challenged Individuals using Bluetooth Technology	Conference	2026 2nd International Conference on Big Data & Machine Learning (ICBDML)	Bhopal, India	08-06-2026	International	979-8-3195-3091-2	https://doi.org/10.1109/ICIMA68728.2026.11564395	NA	NA	NA	NA	NA
8	**CH. Nagaraju ; C. Venkatesh; Shaik Karimullah**; Chennuru Shaik Sana; Uppusetty Varshitha; Menta Venkata Naresh **(6)**	A Unified TSN and Beamforming Framework for Ultra-Low Latency Mobility in 6G mm Wave XL-MIMO Systems	Conference	2nd International Conference on Big Data & Machine Learning (ICBDML)	Bhopal, India	08-06-2026	International	979-8-3195-3091-2	https://doi.org/10.1109/ICIMA68728.2026.11564396	NA	NA	NA	NA	NA
9	**C. Venkatesh**; Ambarapu Rihana; S. Pushpak; **L. Siva Yamini**; Eddala Nithin; Siddavatam Reddy Lakshmi (6)	Design and Development of a Smart Aquaponics System Using IoT	Conference	2026 IEEE Madhya Pradesh Section Conference (MPCON)	Rustam Ji Institute of Technology, Tekanpur, Gwalior, India	13-05-2026	International	979-8-3315-9335-3	https://doi.org/10.1109/ICIMA68728.2026.11564398	NA	NA	NA	NA	NA
10	**Fahimuddin Shaik; Peddapullaiahgari Hariobulesu; C.H. NagaRaju**; Charitha Kummetha; Gopanapalli Chidvilas; Kovuru Aswini (6)	NSST-Based Multi-Modal Medical Image Fusion With LiqDRY-Net Architecture	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	G. Narayanamma Institute of Technology and Science (For Women),Shaikpet, Hyderabad	05-05-2026	International	979-8-3315-8997-4	https://doi.org/10.1109/ICIMA68728.2026.11564399	NA	NA	NA	NA	NA
11	**Peddapullaiahgari Hariobulesu; Ch.Nagaraju; R.Madan Mohan;** Valipireddy Mahitha; Kuruba Manogna; Reddipaka Kiran Kumar	LiteVis-Net: A VGG19-Based Deep Learning Approach for Multi-Focus Image Fusion in Shoreline Analysis	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	G. Narayanamma Institute of Technology and Science (For Women),Shaikpet, Hyderabad	05-05-2026	International	979-8-3315-8997-4	https://doi.org/10.1109/ICIMA68728.2026.11564400	NA	NA	NA	NA	NA

12	M. Sugashini, M. Ravikumar, S. Prabu, K. L. Hemalatha & **Tejaswi Murarrysetty (5)**	Energy-Efficient Resource Allocation in Cognitive Radio Networks Using Self-Adaptive Harris Hawks Optimization Algorithm	Conference	Wireless Edge Computing in Internet of Everything. ICWCIE 2024.	Tumkur, India	01-05-2026	International	978-981-95-0787-0	https://doi.org/10.1109/ICIMA68728.2026.11564401	NA	NA	NA	NA	NA
13	R. Rana Veer Samara Sihman Bharattej, Rathod Maheshwar, Piyush Kumar Pareek, Anisetti Shiva Rama Krishna & **Bodagala Lakshmi Devi (5)**	Bidirectional Long Short-Term Memory with Recurrent Neural Network-Based Spectrum Sensing Technique in Cognitive Radio System	Conference	Wireless Edge Computing in Internet of Everything(ICWCIE 2024)	Tumkur, India	01-05-2026	International	978-981-95-0787-0	https://doi.org/10.1109/ICIMA68728.2026.11564402	NA	NA	NA	NA	NA
14	**Fahimuddin Shaik; Peddapullaiahgari Hariobulesu**; Singam Kiranmai; Bommisetty Sangeetha; Sanganaboyana Ranjith Kumar; Shaik Nawaz (6)	EffiBaSo-Net: An Optimized Deep Learning Model for Lung Cancer Detection and Classification from LDCT Scans Using EfficientNet and Battlefield Optimization Algorithm	Conference	2026 3rd International Conference on Advancements and Key Challenges in Green Energy and Computing (AKGEC)	Ajay Kumar Garg Engineering College, Ghaziabad, India	30-04-2026	International	979-8-3315-8094-0	https://doi.org/10.1109/ICIMA68728.2026.11564403	NA	NA	NA	NA	NA
15	Kammari Rama Krishna; **C. Venkatesh** (2)	A Comprehensive Review of Deep Learning and Iotintegrated Medical Imaging Systems for Pancreatic Cancer Detection	Conference	2026 Contemporary Computing Innovations Conference (CCIC)	Mohan Babu University, Tirupati, Andhra Pradesh, India	30-04-2026	International	979-8-3195-2966-4	https://doi.org/10.1109/ICIMA68728.2026.11564404	NA	NA	NA	NA	NA
16	**C. Venkatesh; L.Siva Yamini**; Naramreddy Sreenath Reddy; Matam Shanmukha Murthy; Chimala Venkata Govardan Yadav; Pindiboyana Suribabu (6)	Multi-Disease MRI Analysis using DenseNet based CNN and U-Net Segmentation to detect brain tumor and Alzheimer diseases	Conference	2026 International Conference on Computing, Electronics & Communications Engineering (ICCECE)	Techno India University, West Bengal,India	28-04-2026	International	979-8-3195-1700-5	https://doi.org/10.1109/ICIMA68728.2026.11564405	NA	NA	NA	NA	NA
17	K. N. S. Reddy, S. O. Coumar, V. Nagendra, Y. Sravani, K. Sangeetha and **P. Hariobulesu, (6)**	Deep Learning-Based ECG Signal Quality Determination with Optimized CNN Hyperparameters	Conference	2025 International Conference on Sensors and Related Networks (SENNET)(IEEE)	Vellore Institute of Technology, Vellore, India	11-09-2025	International	979-8-3315-9746-7	https://doi.org/10.1109/ICIMA68728.2026.11564442	NA	NA	NA	NA	NA

18	C. Avinash Reddy; D. Ganga Shivani; **B. Lakshmi Devi;** M. Architha; G. Dharma Teja; **G. Thirumalaiah (6)**	PulmoXLM-Net: A Hybrid Deep Liquid Learning Framework for Automated Lung Cancer Detection and Classification,	Conference	2026 4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT)	Jawaharlal College of Engineering. CET), Ottapalam, Kerala, India.	01-04-2026	International	979-8-3315-9654-5	https://doi.org/10.1109/ICIMA68728.2026.11564412	NA	NA	NA	NA	NA
19	**SMD.Fayaz Basha**; **K. Riyazuddin**; Vadla Ram Charan; Kalva Sucharitha; Pilli Vasantha Lakshmi; G.V Jeevan Kumar Reddy **(6)**	Compressor-Based Adaptive Approximate Multiplier with MFA and Clock Gating for Reduced Latency in Neural Network Applications	Conference	2026 4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT)	Jawaharlal College of Engineering. CET), Ottapalam, Kerala, India.	01-04-2026	International	979-8-3315-9654-5	https://doi.org/10.1109/ICIMA68728.2026.11564413	NA	NA	NA	NA	NA
20	**Tejaswi MurarrySetty; Bodagala Lakshmi Devi**; Pola Radhika; Boya Manikumar; Mopuri Pavan Kumar; Pappur Shaguptha (6)	Brain Tumor Multi-Classification Using oncoM2F-Net: A mobilenetV2 and Nature-Inspired Optimization Approach	Conference	2025 1st International Conference on Advancement in Futuristic Technologies (ICAFT)	Belagavi, India	31-03-2026	International	979-8-3315-7159-7	https://doi.org/10.1109/ICIMA68728.2026.11564415	NA	NA	NA	NA	NA
21	**J. Chinna Babu; Shaik Karimullah; P. Chandra Reddy**; B. Hari Babu; **C. Madana Kumar Reddy; Fahimuddin Shaik (6)**	Intelligent Shopping Carts: IoT Innovation For Supermarkets,	Conference	2025 2nd International Conference on Recent Trends in Electrical, Electronics and Computing Technologies (ICRTEECT)	Warangal, India.	26-03-2026	International	979-8-3315-8172-5	https://doi.org/10.1109/ICIMA68728.2026.11564417	NA	NA	NA	NA	NA
22	**K. Riyazuddin; Fayaz Basha**; P. Pavitra Reddy; C. Shekshavali; R. Radha; S. Sameer (6)	Machine Learning-Based Framework for Enhancing Security and Performance of Beyond 5G Wireless Sensor Networks	Conference	2025 IEEE International Conference on Emerging Trends in Computing and Communication (ETCOM)	Mangalore, India	26-03-2026	International	979-8-3315-8508-2	https://doi.org/10.1109/ICIMA68728.2026.11564418	NA	NA	NA	NA	NA
23	**B. Venkatesh**; Y Suresh; **J.Chinna Babu; P. Chandra Reddy; B. Hari Babu; Shaik Karimullah (6)**	Paper Tit Revolutionizing Vehicle Manoeuvrability: A Comprehensive Study on Innovative Electronics-Enabled Four-Wheel Steering Systems For Zero Turning Radius	Conference	2025 2nd International Conference on Recent Trends in Electrical, Electronics and Computing Technologies (ICRTEECT)	Warangal, India.	26-03-2026	International	979-8-3315-8172-5	https://doi.org/10.1109/ICIMA68728.2026.11564419	NA	NA	NA	NA	NA

24	T. Aditya Sai Srinivas; **Aanala Hari**; Manasu Madhavi; Prashant R Kaigaddi; G. Radha; Naresh Madavarapu (6)	Quantam Authentication Techniques Against Emerging Threats in QKD	Conference	2025 IEEE 3rd Global Conference on Wireless Computing and Networking (GCWCN)	Lonawala,Maharashtra, India	25-03-2026	International	979-8-3315-0335-2	https://doi.org/10.1109/ICIMA68728.2026.11564420	NA	NA	NA	NA	NA
25	Srinivasarao Chilakala; **C. Venkatesh** (2)	A Systematic Analysis and Optimization of Deep Learning Models for Prostate Cancer detection and classification on medical imagery	Conference	2025 2nd International Conference on Artificial Intelligence for Innovations in Healthcare Industries (ICAIIHI)	Raipur, India	26-02-2026	International	979-8-3315-8267-8	https://doi.org/10.1109/ICIMA68728.2026.11564421	NA	NA	NA	NA	NA
26	**K.Chandrahasa Reddy**; Shaik Vajiya; Thummala Perraih Gari Supriya; Mopuri Sujeen Kumar; Siripireddy Vema Prathip Reddy; **G.Thirumalaiah** G. Thirumalaiah (6)	BayesLSTM-FCTN: A Bayesian LSTM-Enhanced Tensor Network for High-Resolution Hyperspectral Image Fusion,	Conference	2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	RVS Technical Campus, Coimbatore, India	13-02-2026	International	979-8-3315-9929-4	https://doi.org/10.1109/ICIMA68728.2026.11564423	NA	NA	NA	NA	NA
27	Kasigari Prasad; N V Udayeswara Reddy; L Venkata Lakshumma; P Swapna Sree; B Umesh Chandra; **G.Thirumalaiah (6)**	Design and Implementation of Frequency Reconfigurable Microstrip Patch Antenna for Wireless Power Transfer Applications,	Conference	2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	RVS Technical Campus, Coimbatore, India	13-02-2026	International	979-8-3315-9929-4	https://doi.org/10.1109/ICIMA68728.2026.11564424	NA	NA	NA	NA	NA
28	**B. Lakshmi Devi; M. Venkata Dasu (2)**	An Efficient Emotion Recognition via Landmark Graphs and Multi-Head Attention	Conference	2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	RVS Technical Campus, Coimbatore, India	13-02-2026	International	979-8-3315-9929-4	https://doi.org/10.1109/ICIMA68728.2026.11564425	NA	NA	NA	NA	NA
29	Kuruva Raju; K. Kiran; K. Lokesh; V Mahesh Kumar Reddy; R. Senthil Kumar; **K. M. D. Rajesh Babu (6)**	Cost-Effective Voltage Stability Enhancement via HEES-based Interline DC Flexible Voltage Restorer	Conference	2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	RVS Technical Campus, Coimbatore, India	13-02-2026	International	979-8-3315-9929-4	https://doi.org/10.1109/ICIMA68728.2026.11564426	NA	NA	NA	NA	NA

30	Y. Hari Krishna; K. Kiran; A. Venkata Ramana; D Arun Prasad; R. Senthil Kumar; **K. M. D. Rajesh Babu (6)**	Solar-Powered Isolated Bidirectional DC–AC Converter for Microgrid and Distributed Energy Systems	Conference	2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	RVS Technical Campus, Coimbatore, India	13-02-2026	International	979-8-3315-9929-4	https://doi.org/10.1109/ICIMA68728.2026.11564427	NA	NA	NA	NA	NA
31	Rajendra Prasad Somineni; Kishore Pinniti; Priyanka Brahmaiah; **J Chinna Babu (4)**	Design and Analysis of Different CMOS Comparators	Conference	2025 Third International Conference on Emerging Applications of Material Science and Technology (ICEAMST)	RV College of Engineering, Bengaluru, India	21-01-2026	International	979-8-3315-8707-9	https://doi.org/10.1109/ICIMA68728.2026.11564430	NA	NA	NA	NA	NA
32	**P. Syamala Devi**; K. Hima Bindu; B. Hussen Basha; S. Mohan Venkat Kailash; P. Madhu Sudhan Reddy; **G. Thirumalaiah (6)**	VLSI Implementation of Edge-Adaptive Temporal-Spatial Neural Engine (EATNE) for Ultra-Low-Power ECG Arrhythmia Detection,	Conference	2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)	R P Sarathy Institute of Technology, Salem	20-01-2026	International	979-8-3315-6587-9	https://doi.org/10.1109/ICIMA68728.2026.11564431	NA	NA	NA	NA	NA
33	**M. Ravi Kishore**; **Y.Pavan Kumar** Reddy; K. Priyanka; S.R Sai Deepthi; K. Sasikanth; **G. Thirumalaiah (6)**	Hybrid DeepHNeph-Net:Integrating Efficientnet and Bat Optimization Algorithm for Kidney Stone Severity Classification	Conference	2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)	R P Sarathy Institute of Technology, Salem	20-01-2026	International	979-8-3315-6587-9	https://doi.org/10.1109/ICIMA68728.2026.11564432	NA	NA	NA	NA	NA
34	K. Shankar; K. Rajmohan; R. Rajeswari; **Y. Sunanda;** S. Gnanamurugan; **Y. Pavan Kumar Reddy(6)**	A Hybrid Trust-Aware Protocol Integrating LSTM and Griffon Vultures Optimization with Leach for Enhanced WSN Lifetime	Conference	2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)	R P Sarathy Institute of Technology, Salem	20-01-2026	International	979-8-3315-6587-9	https://doi.org/10.1109/ICIMA68728.2026.11564433	NA	NA	NA	NA	NA
35	**CH. Nagaraju,C. Venkatesh**, A.Pravee na,G. Nithya Santhoshini, T. Prasanth Kumar, K. Rambabu **(6)**	Performance Analysis of Energy-Efficient URLLC Systems with Nonlinear Energy Harvesting and Finite Blocklength Transmission	Conference	2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)	R P Sarathy Institute of Technology, Salem	20-01-2026	International	979-8-3315-6587-9	https://doi.org/10.1109/ICIMA68728.2026.11564434	NA	NA	NA	NA	NA

36	**Y. Pavan Kumar Reddy, Y. Sunanda, M. Ravikishore** & K. Shankar (4)	OTP-Driven Vehicle Tracking and Ignition Management System	Conference	Proceedings of the 4th International Conference on Signal and Data Processing. ICSDP 2024		02-01-2026	International	978-981-95-1057-3	https://doi.org/10.1109/ICIMA68728.2026.11564435	NA	NA	NA	NA	NA
37	**S. Fayaz Begum & P. Syamaladevi (2)**	Design and Implementation of UART Using FPGA Board	Conference	Emerging Technology and Sustainable Solutions. ICETSS 2024	Chitkara University Punjab, India	02-01-2026	International	978-3-032-11490-7	https://doi.org/10.1109/ICIMA68728.2026.11564436	NA	NA	NA	NA	NA
38	**C. Venkatesh,L. Sivayamini**,T. Sandhya,K. Santhosh Naik,P. Raja Rajeswari,T. Sohith Yadav (6)	A Deep Learning Approach for Plant Disease Detection	Conference	2025 IEEE International Conference on Contemporary Computing and Communications (InC4)	CHRIST University, Bangalore,India	01-12-2025	International	979-8-3315-2118-9	https://doi.org/10.1109/ICIMA68728.2026.11564437	NA	NA	NA	NA	NA
39	Jayanthi L.; Suganya A.; G. Maya; Srinivasan M.; **S. Fayaz Begam**; Vanguri Smitha **(6)**	AI Trading: A Growing Part of Fintech Industry	Conference	2025 International Conference on Technology Enabled Economic Changes	Tashkent, Uzbekistan	23-10-2025	International	979-8-3315-2099-1	https://doi.org/10.1109/ICIMA68728.2026.11564438	NA	NA	NA	NA	NA
40	Manoj Pal,Rajesh Dey, Rupali Atul Mahajan, Mudassir Khan,Abrar Ahmed Syed,**Shaik Karimullah (6)**	Edge Intelligence: Unique Machine Learning Strategies for Enhancing Real-Time IoT Data Processing	Conference	2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)(IEEE)	Bangladesh Army University of Science and Technology,Bangladesh	29-09-2025	International	979-8-3315-9694-1	https://doi.org/10.1109/ICIMA68728.2026.11564439	NA	NA	NA	NA	NA
41	**jyothi, Chinna Babu,** Alind, **Nuka, Mallikharjuna, Chelamalasetty, Venkatesh** , Kumar,T.Naresh Kumar and Adarsh (6)	Deep Learning Methods for Real -Time Detection of Deepfake Faces in Images and Videos	Conference	2025 2nd International Conference On Multidisciplinary Research and Innovations in Engineering (MRIE)	K.R. Mangalam University, Haryana,India	19-09-2025	International	979-8-3315-8673-7	https://doi.org/10.1109/ICIMA68728.2026.11564440	NA	NA	NA	NA	NA
42	**J.Chinna Babu**; Alind; **C. Venkatesh; Mallikharjuna Rao Nuka**; Adarsh Kumar (5)	Delivery of Medicine Using a UAV Powered by the KK Copter 2.1.15 Flight Controller	Conference	2025 2nd International Conference On Multidisciplinary Research and Innovations in Engineering (MRIE)	K.R. Mangalam University, Haryana,India	19-09-2025	International	979-8-3315-8673-7	https://doi.org/10.1109/ICIMA68728.2026.11564441	NA	NA	NA	NA	NA

43	**Shaik Karimullah**; **J. Chinna Babu**; Anwar Bhasha Pattan; Sultan Ahmad; Sudan Jha	A Comprehensive Review on Challenges, Frameworks, and Future Trends for Intelligent Security in Industrial IoT	Book Chapter	Cognitive Security for Industrial IoT: AI-Driven Approaches to Industry 4.0	NA	27-05-2026	International	9.781E+12	https://doi.org/10.1201/9781003609773	NA	NA	NA	NA	NA
44	**G Thirumalaiah**, P Partha Praneeth Reddy, S Sai Sree, Mudassir Khan, Y Sai Pavani, E Santhosh Kumar, **M Hanumanthu (7)**	A Review on Edge-AI powered image segmentation and sensor-based crop management	Book Chapter	Advanced Computing and AI for Sustainable Environment, Energy, and Smart Manufacturing	NA	22-05-2026	International	9.781E+12	https://doi.org/10.1201/9781003790730	NA	NA	NA	NA	NA
45	**G. Thirumalaiah**, E. Mahaboob Basha, M. Nandini, Mudassir Khan, M. Hanumanthu, Kamboj i Ganga Naga Pavan Kumar, Earla Karthik(7)	A review on Smart Path Finder: Lightweight visual companion for impaired mobility using edge AI	Book Chapter	Advanced Computing and AI for Sustainable Environment, Energy, and Smart Manufacturing	NA	22-05-2026	International	9.781E+12	https://doi.org/10.1201/9781003790730	NA	NA	NA	NA	NA
46	**G. Thirumalaiah**, Mudassir Khan (2)	Smart Self-Powered Wireless Sensor Network for Industrial Monitoring	Book Chapter	Smart Chips for Smart Devices: VLSI Design for Next-Generation IoT Solutions	NA	20-02-2026	International	9.78139E+12	https://doi.org/10.1002/9781394335831.ch8	NA	NA	NA	NA	NA
47	Mudassir Khan,**Fahimuddin shaik**,Anwar Basha Pattan,**Shaik Karimullah (4)**	Enhancing Remote Healthcare with Internet Of Things	Book Chapter	Integration Of Internet of things and machine learning	NA	19-02-2026	International	9.781E+12	https://doi.org/10.1201/9781003634768	NA	NA	NA	NA	NA
48	K. Naga sankar Reedy,Peddapullaiahgari **Hari Obulesu**,**Shaik Karimullah**,Anwar Bhasha Pattan,**Fahimuddin Shaik (6)**	Heart Rate Estimation Using an Electrocardiogram-Aided Photoplethysmography Signal Quality Assessment Framework	Book Chapter	Integration Of Internet of things and machine learning: Design Models	NA	19-02-2026	International	9.781E+12	https://doi.org/10.1201/9781003634768	NA	NA	NA	NA	NA
49	K. Naga sankar Reedy,**Peddapullaiahgari Hari Obulesu**,**Shaik Karimullah**,Anwar Bhasha Pattan,**Fahimuddin Shaik**,Mudassir Khan (6)	Improved Fetal Electrocardiogram Detection Using A Hybrid wavelet-based denoising Method	Book Chapter	Integration Of Internet of things and machine learning	NA	19-02-2026	International	9.781E+12	https://doi.org/10.1201/9781003634768	NA	NA	NA	NA	NA

50	**C.venkatesh,L.siva Yamini,M. venkata dasu,Shaik karimullah**,T.lakshmi Narayana (5)	A deep learning and optimization-based cardiac diagnosis system for heart disease classification using electrocardiogram siganls	Book Chapter	Integration Of Internet of things and machine learning	NA	19-02-2026	International	9.781E+12	https://doi.org/10.1201/9781003634768	NA	NA	NA	NA	NA
51	Mudassir Khan,Rupali Mahajan,Rajesh Dey,**Shaik karimullah (4)**	Addressing Data security and privacy challenges	Book Chapter	Cybernetic Shield	NA	18-12-2025	International	9.781E+12	https://doi.org/10.1201/9781003567585	NA	NA	NA	NA	NA
52	**R.Mahesh Kumar,Y.Pavan Kumar Reddy**,N.Vishnu Vardhan,D.Venkata sai Tharun,D.Yaswanth, M.surendra (6)	Iot based integrated farming:optimizing agriculture with smart sensors	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
53	**K.shankar**,K.Madhavi priya,**Y.sunandha,M. Ravi kishore,Y.pavan Kumar Reddy**,P.sireesha (7)	Improved channel estimation in MIMO-THz systems using sparse sensing and dictionary optimization	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
54	**K.shankar,K.chandrahas Reddy,Y.sunandha, M.Ravi kishore,Y.pavan Kumar Reddy**,A. varshitha (6)	Empowering accessibility: portable voice-enabled interface for disabled users	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
55	**K.shankar,K.chandrahas Reddy,Y.sunandha, Y.pavan Kumar Reddy,A. Swapna**,O.Hemakeshavlu (6)	Low power 5-bit falsh ADC utilizing dual-stage op-amp and optimized wallace tree encoder for enhanced precision	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
56	**L.siva yamini,C.venkatesh**, B.suresh Babu,G.supriya,K.yathiswar Reddy,R.vishnu vardhan (6)	Deep learning for enhanced diagnosis od Diabetic retinopathy	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA

57	**P.syamaladevi**,G.Shreya,J.sivaprasad,V.pavan kumar Reddy,D.rajeswari (6)	Design of high speed 5-bit flash ADC using double tail comparator for portable devices	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
58	**P.syamaladevi**,K.sudharshan Reddy,C.Vinutha,A.venkatahemanth,Y.Yaswanth	Design and simulation of FINFET 4-bit barrel shifter using GDI technique for low power applications	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
59	**M.Tejaswi**,**P.Syamaladevi**,S.Murali,Y.Manideep,K.Pavani,C.Monika (6)	High performance 8-bit approxiamate Dadda multiplier with GDI logic-based approximate and exact 4:2 compressors using finFET technology	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
60	**L.Sivayamini**,**C.Venkatesh**, **M.Venkata Dasu**,S.Lokeswari,G.Keerthi,K.Nagaraju (6)	An innovative deep learning model for the early identification and management of gestational diabetes	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
61	**R. Mahesh Kumar**, **M. Ravikishore**, S. Fatima Jabeen, K. Anitha Reddy, C. Bharath Kumar, P. Hari Krishna (6)	Solar smart track: intelligent dual-axis tracking with fault detection for enhanced performance	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
62	**CH Nagaraju**,**C.Venkatesh**,P.Bhargavi,B.Chakrapani Reddy,Shaik Arif,C.Chandana (6)	Design and implementation of area efficient high-speed multiplier using Han-Carlson adder	Book Chapter	Synergies in smart and virtual systems using computational intelligence	NA	22-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003685364	NA	NA	NA	NA	NA
63	Rajesh Dey,Mudassir Khan,Maram Bani Younes,Barga Mohammed Mujahid,**Shaik karimullah (5)**	Immutable and Transparent Harvesting of web Block chain	Book Chapter	Next-generation Data-Driven Business 4.0 using the internet of things,Block chain, and inter connected Devices	NA	15-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003568988	NA	NA	NA	NA	NA
64	Rajesh Dey,Mudassir Khan,Vijay Kumbhar,Jyothi Shendage,**Shaik karimullah (5)**	Blockchain complementary model	Book Chapter	Next-generation Data-Driven Business 4.0 using the internet of things,Block chain, and inter connected Devices	NA	15-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003568988	NA	NA	NA	NA	NA

65	**K.Riyazuddin**,K.Deekshitha,P.Adiseshu,J.Bhavani,P.Dinesh	DeepWave:Revolutionizing underwater communication with Li-Fi technology	Book Chapter	Advancing Innovation Through AI and Machine Learning Algorithms	NA	10-10-2025	International	9.781E+12	https://doi.org/10.1201/9781003684589	NA	NA	NA	NA	NA
66	Mudassir khan,S.Z. Parveen,**Shaik karimullah**,Barga Mohammed Mujahid (4)	Enhanced Encryption and Digital Signature Scheme Utilizing EC-based Encryption and Multi-Chaotic Pseudo Random Generation	Book Chapter	Digital Twins and ESG	NA	08-08-2025	International	9.781E+12	https://doi.org/10.1002/9781394303243.ch12Digital Object Identifier (DOI)	NA	NA	NA	NA	NA
67	Asif Hussain Shaik, **Chinna Babu Jyothi (2)**	Introduction to Biosensors for Point-of-Care Testing	Book Chapter	Bioanalytical Techniques: Principles and Applications	NA	08-08-2025	International	9.78139E+12	DOI:10.1002/9781394314133	NA	NA	NA	NA	NA
68	Shaik Asif Hussain, Mudassir Khan, **J. Chinna Babu**, Shaik Javeed Hussain, Yu-Chen Hu (5)	An Automated System to Identify and Detect the Faults in Bottle Cap Production and Visual Inspection Using Raspberry Pi	Book Chapter	Digital Twins and ESG	NA	08-08-2025	International	9.78139E+12	https://doi.org/10.1002/9781394303243.ch10	NA	NA	NA	NA	NA
69	Ajmeera Kiran, Mudassir Khan, **J. Chinna Babu**, B. P. Santosh Kumar, Mohammad Mazhar Nezami (5)	DDoS Detection Using Semi-Supervised Machine Learning Algorithms	Book Chapter	Digital Twins and ESG	NA	08-08-2025	International	9.78139E+12	https://doi.org/10.1002/9781394303243.ch11	NA	NA	NA	NA	NA
70	**M. Hanumanthu,** Kummithi Ganesh, Pothaboyina Lavanya, Perangala Mani, Shaik Mahammad Adnan, Moddasir Khan, **G. Thirumalaiah (7)**	A Novel Low Power Analog Comparator Design for Biomedical Instrumentation	Book Chapter	Smart Systems and Beyond	NA	01-10-2026	International	NA	https://www.taylorfrancis.com/chapters/edit/10.1201/9781042026289-48/nowel-low-power-analog-comparator-design-biomedical-	NA	NA	NA	NA	NA
71	**M. Hanumanthu,** T. Dharani, K. Bharath, N. Udaya Kiran, **G. Thirumalaiah,** V. Harsha Vardhan, Reddy, Akhil (7)	Design of Efficient Precision Analog Comparator for Amperometric Glucose Sensing	Book Chapter	Smart Systems and Beyond	NA		International	NA	https://www.researchgate.net/publication/412804222_Design_of_Efficient_Precision_Analog_Comparator_for_Amperometric_Glucose_Sensing	NA	NA	NA	NA	NA

R & D Incharge

Head of the Department

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET

Department of CSE

(b.CSE) 2. Details of Conference Proceddings published with ISSN From JULY 2025 to JUNE 2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume & Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	**P.SWATHI** M. Sravani, V. Sivani, M. Susmitha M. Swetha **(5)**	CSE	online payments fraud detecton using machine learning	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	NITS,HYDERABAD	28-29 FEB 2024	HYDERABAD	NA	331-338	Nov-26	INTERNATIONAL	1876-1119	SCOPUS	https://doi.org/10.1007/978-981-95-0269-1_38	NA	NA	NA
2	**B.NAVEEN KUMAR,** U. Rajesh, S. Mahaboob Basha, C. Seshikanth, K. Shailendra Kumar **(5)**	CSE	Detection and classification of pneumonia in chest x-ray images using deep learning Techniques	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	NITS,HYDERABAD	28-29 FEB 2024	HYDERABAD	NA	231-239	Nov-26	INTERNATIONAL	1876-1119	SCOPUS	https://doi.org/10.1007/978-981-95-0269-1_27	NA	NA	NA
3	**K.KARPAGAVALLI** N.Rajiya bhanu R.Lavanya G.Reethika K.Reddy pavani **(4)**	CSE	Enhancing the cloud security through data encryption and dispersion	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	NITS,HYDERABAD	28-29 FEB 2024	HYDERABAD	NA	321-330	Nov-26	INTERNATIONAL	1876-1119	SCOPUS	https://doi.org/10.1007/978-981-95-0269-1_37	NA	NA	NA

4	**S.MOHAMMAD RAFI B. Naveen Kumar,** K. Balaji Reddy, J. Pavan Kumar, P. Datta Sai Prem Prathap Reddy P. Harith (7)	CSE	Analysis and prediction of crime hotspots using machine learning with stacked generalizatio n approach	Proceedings of the 7th International Conference on Communicatio ns and Cyber Physical Engineering	NITS,HYDERABAD	28-29 FEB 2024	HYDERAB AD	NA	240-246	Nov-26	INTERNATIONAL	1876-1119	SCOPUS	https://doi.org/ 10.1007/978- 981-95-0269- 1_28	NA	NA	NA
5	**T. N. Ranganadham** J. Mahendra Reddy L. Kiran B. ManiKanth B. Lokeswar **R. Madhan Mohan** (6)	CSE	Cloud Secrecy: Techniques for Improving Data Security and Protection in Cloud Capacity	Proceedings of the 7th International Conference on Communicatio ns and Cyber Physical Engineering	NITS,HYDERABAD	28-29 FEB 2024	HYDERAB AD	NA	123-130	Nov-26	INTERNATIONAL	1876-1119	SCOPUS	https://doi.org/ 10.1007/978- 981-95-0269- 1_14	NA	NA	NA
6	**T. N. Ranganadham** SaiKrishna Ulavapati, Mg Pandu Ranga Reddy, SaiVinod Anandi (4)	CSE	LoanPredict or: A Streamlit Application for Interpretabl e and Fair Loan Approval Prediction	Proceedings of the 7th International Conference on Communicatio ns and Cyber Physical Engineering	NITS,HYDERABAD	28-29 FEB 2024	HYDERAB AD	NA	10 T0 22	Nov-26	INTERNATIONAL	1876-1119	SCOPUS	https://doi.org/ 10.1007/978- 981-95-0269- 1_2	NA	NA	NA
7	**Dr.D.Sarika ,K.Karpagavalli, Dr,V.Sathyendra kumar, D.S.Chandra mouli,** Y.Mahanandi (5)	CSE	Rating Prediction of Google Play Store Apps by Using Machine Learning	Proceedings of Tenth International Conference on Microelectronics Electromagnetic s and Telecommunicat ions (ICMEET 2025)	SIDDARTHA COLLEGE,VIJAY AWADA	24-25 JAN 2025	VIJAYA WADA	1599	282–290	Mar-26	international	1876-1100	SCOPUS	https://doi.org/1 0.1007/978-3- 032-20318- 2_26	NA	https://link.springer.com/c hapter/10.1007/978-3-032- 20318-2_26	NA
8	**Dr.T. Harikala** H N. Lakshmi, B. Rupa Devi, , G. Ramakrishna, Penubaka Balaji (5)	CSE	Advancing Brain Tumor Classificatio n Using the Explainable CerebriNet Model	"Springer 8 International Conference on Intelligent Computing and Communication (ICICC-2025)"	CMR Technical Campus, Hyderabad,	26 & 27 September , 2025	HYDERAB AD	NA	57-64	May-26	international	2367-3389	SCOPUS	https://doi.org/1 0.1007/978-3- 032-18346-0_7	NA	https://link.springer.com/c hapter/10.1007/978-3-032- 18346-0_7	NA

Note:
Ensure that all entries are arranged in **chronological order (latest first)**, and **no field is left blank** — fill all fields **as applicable and available with valid sources**.
If any information is **not available**, clearly mention **"NA"** in that field.

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET

DEPARTMENT OF

(C.CSE) 3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From JULY 2025 to JUNE 2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	**B. Dilip Chakravarthy**,M. Ananda Gopal Reddy,D. Fareedha ,Yama Charitha,L. Ganesh Kumar Reddy**(5)**	Hybrid Quantum–Machine Learning Framework for Precision Farming : Optimizing Crop Yield and Profitability	Proceedings Of Confernce	2026 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Nagpur, India	14-04-2026	International	79-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469229	scopus		https://www.scopus.com/pages/publications/105038013090?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=-Sbg37gAAAAJ&citation_for_view=-Sbg37gAAAAJ:9yKSN-GCB0IC	
2	**V. Sathyendra Kumar,** Jakka Vidyadhari**(2)**	A Next-Generation Hybrid TCN–Transformer Encoder Deep Learning Framework for Robust and Interpretable Climate Vulnerability Index Prediction in India	Proceedings Of Confernce	2026 International Conference on Computing, Communication, Control and Cyber-Physical Systems (I5CPS)	Karaikal, Puducherry, India	30-03-2026	International	979-8-3315-6154-3	https://doi.org/10.1109/I5CPS67958.2026.11452329	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=FJ6w2_UAAAAJ&citation_for_view=FJ6w2_UAAAAJ:Se3iqnhoufwC	
3	**V. Sathyendra Kumar,** Shaik Sumiya Sultana**(2)**	A Multimodal Deep Learning Framework for Automated Scalp Psoriasis Detection and Severity Assessment	Proceedings Of Confernce	2026 International Conference on Computing, Communication, Control and Cyber-Physical Systems (I5CPS)	Karaikal, Puducherry, India	30-03-2026	International	979-8-3315-6154-3	https://doi.org/10.1109/I5CPS67958.2026.11452382	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=FJ6w2_UAAAAJ&citation_for_view=FJ6w2_UAAAAJ:roLk4NBRz8UC	
4	**P.SWATHI,**Y. V. S. Ganesh,G. T. Lakshmi,M. Sravani,A. Venkatesulu**(5)**	Scalable convolutional neural network model for early pneumonia detection	Proceedings Of Confernce	2ND INTERNATIONAL CONFERENCE ON Devices, Intelligent Systems and Communication (DISC-2024)	JBIT,HYDERABAD	08-04-2026	International	AIP Conf. Proc. 3376, 020008 (2026)	https://doi.org/10.1063/5.0330247	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=KbgGNsEAAAAJ&citation_for_view=KbgGNsEAAAAJ:LkGwnXOMwfcC	

5	**P.SWATHI,**E. Madhu,K. Maheswari,K. Maheswari,P. Kalyani**(5)**	Intelligent detection of behavior-based intranet attacks using machine learning techniques	Proceedings Of Confernce	2ND INTERNATIONAL CONFERENCE ON Devices, Intelligent Systems and Communication (DISC-2024)	JBIT,HYDERABAD	08-04-2026	International	AIP Conf. Proc. 3376, 020008 (2026)	https://doi.org/10.1063/5.0330248	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=KbgGNsEAAAAJ&citation_for_view=KbgGNsEAAAAJ:MXK_kJrjxJIC	
6	**P.SWATHI,**P. Govardhan Reddy,B. Deepthi,D. Chindu,S. Adil **(5)**	Innovative web framework for cervical cancer detection using machine learning	Proceedings Of Confernce	2ND INTERNATIONAL CONFERENCE ON Devices, Intelligent Systems and Communication (DISC-2024)	JBIT,HYDERABAD	08-04-2026	International	AIP Conf. Proc. 3376, 020008 (2026)	https://doi.org/10.1063/5.0330248	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=KbgGNsEAAAAJ&citation_for_view=KbgGNsEAAAAJ:Se3iqnhoufwC	
7	**S.RIYAZ BANU ,**P. Santosh Kumar,T.Naresh,Dr.K.Vinod Kumar,K.Hari Babu,Dr.N.Ramesh Babu (6)	Enhancing micro-service performance:a hybrid approach using caching and batching techniques	Proceedings Of Confernce	2025 2nd Asian conference on intelligent technologies	KOLAR, India	20-03-2026	International	979-8-3315-3660-2/25/$31.00	10.1109/ACOIT66109.2025.11436425	scopus				
8	**Mahammad Rafi Shaik; Naseema Shaik;** Supraja Madury Velagacharla; Vamshi Doddeppa; Sowjanya Lakshmi Thallam; Syam Sai Pesala; Uday Bylla(8)	Classifying social media posts using machine learning and natural language processing	Proceedings Of Confernce	2ND INTERNATIONAL CONFERENCE ON Devices, Intelligent Systems and Communication (DISC-2024)	JBIT,HYDERABAD	08-04-2026	International	AIP Conf. Proc. 3376, 020008 (2026)	https://doi.org/10.1063/5.0330316	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=LevzRlgAAAAJ&citation_for_view=LevzRlgAAAAJ:WF5omc3nYNoC	
9	**Mahammad Rafi Shaik; Naseema Shaik;** M. Rukmin; T. Satwika; B. Prathap; A. Sai Vardhan(6)	UCS: Unified chatbot solution for university payments, enrollment, exam schedules, and results	Proceedings Of Confernce	2ND INTERNATIONAL CONFERENCE ON Devices, Intelligent Systems and Communication (DISC-2024)	JBIT,HYDERABAD	08-04-2026	International	AIP Conf. Proc. 3376, 020008 (2026)	https://doi.org/10.1063/5.0330315	scopus			https://scholar.google.com/citations?view_op=view_citation&hl=en&user=LevzRlgAAAAJ&citation_for_view=LevzRlgAAAAJ:ufrVoPGSRksC	

10	**K. Keerthi Naidu;** P. Venkata Deepthi; M. Sohail; N. Vinay; A. Sreevalli; **P. Changamma(6)**	Attention-Augmented Multi-Scale CNNs for Robust Plant Leaf Disease Detection and Classification	Proceedings Of Confernce	7th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI)		04-03-2026	International	979-833155519-1	10.1109/ICMCSI67283.2026.11412683	scopus		Scopus - Document Details		
11	**Katuri Keerthi Naidu; N. Merrin Prasanna; Pabbati Swathi; Naresh Kumar Reddy Singareddy**; Madakala Lakshmidevi(5)	Optimizing Air Quality Predictions with Hybrid LSTM-QML Models for Urban Sustainability	Proceedings Of Confernce	4th Odisha International Conference on Electrical Power Engineering, Communication and Computing Technology (ODICON)		14-04-2026	International	979-8-3315-7088-0	DOI: 10.1109/ODICON66687.2026	scopus		https://www.scopus.com/pages/publications/105038027838?origin=resultslist		
12	**Dr.P.Changamma, K. Keerthi Naidu;** Tokala Jhanu Kalyani; Devulapalli Madhuri Reddy; Peddakotla Kumar Reddy; Anthati Karthik**(6)**	Automated Sleep Disorder Detection Using Machine Learning and Deep Learning Model	Proceedings Of Confernce	7th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI)	Goathgaun, Nepal	04-03-2026	International	979-833155519-1	DOI: 10.1109/ICMCSI67283.2026.11412682	scopus				
13	**Nyamathulla Shaik;** K. Sai Venu Prathap; Nadendla Sirisha; Sudhir Ponnapalli; Raghunadha Reddi Dornala; Kambhampati Rama Gopala Krishna Murthy(6)	Ensemble Deep Map-Learning System for Real-Time Underwater Image Improvement	Proceedings Of Confernce	5th International Conference on Sentiment Analysis and Deep Learning, ICSADL 2026		31-03-2026	International	979-8-3315-6883-2	10.1109/ICSADL67539.2026.11451971Copy to clipboard	scopus		https://www.scopus.com/pages/publications/105036586284?origin=resultslist		
14	**Nyamathulla Shaik;** Shashavali Dodiyam; Padmaja Vemala; Pallavi Ragula; Prakash Rao Chagalamarri(5)	Improved Traffic Sign Detection with ECA Attention and Augmentation	Proceedings Of Confernce	2026 7th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI)		04-03-2026	International	979-8-3315-5519-1	10.1109/ICMCSI67283.2026.11412664	scopus		https://www.scopus.com/pages/publications/105034881044?origin=resultslist		
15	**N Sunil Kumar;** K. Pushpa; Sreenivas Madupu; Anuradha Parasar; A. Bharathi; S. Mohanasundaram(6)	Fuzzy–Decision Tree Model for Online Fraud Detection Using Psycholinguistic and Personality Features	Proceedings Of Confernce	2025 2nd Asia Pacific Conference on Innovation in Technology, APCIT 2025		04-03-2026	International	979-8-3315-2306-0	10.1109/APCIT65661.2025.11411302	scopus		https://www.scopus.com/pages/publications/105038013090?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=-wYFMrwAAAAJ&citation_for_view=-wYFMrwAAAAJ:d1gkVwhDpl0C	

16	**Sreenivasulu Meruva**,Balaji Chanda,Chinna Maddi Pothuganti,Aditya Mutyala,Bhuvana Chandra Reddy Sajjala**(6)**	CNN-Based Framework for Real-Time SkinCancer Classification Based on Medical Images	Proceedings Of Confernce	3rd international conference on E merging trends in engineering and medical science		06-06-2026	International	979-8-3315-9383-4	10.1109/ICETEMS66917.2026.11469683	scopus				
17	**Mr. M. Sreenivasulu**,S. Sabeel,Y. Naga Sai Ganesh,K.Ramanandin, E. Reddy Siva Lakshmi**(5)**	Adaptive Multi-Modal Fusion for Accurate Cardiovascular Risk and Heart Failure Detection	Proceedings Of Confernce	3rd international conference on E merging trends in engineering and medical science		14-04-2026	International	979-8-3315-9383-4	10.1109/ICETEMS66917.2026.11469689	scopus				
18	**S.Naveen Kumar**,Ainomugisha Maxima; Maninti Venkateswarlu; Majid Saleem, Tella Prameela; Bala Gangadhara Gutam(6)	Deep Learning Methods of Unstructured Data Integration and Analysis to optimize Decision making and database	Proceedings Of Confernce	2025 IEEE Pune Section International Conference,Pune		17-02-2026	International	979-8-3315-8834-2	10.1109/PuneCon67554.2025.11378885	scopus				
19	**S.Naveen Kumar**,Nithya Yammanoor,Mounika Koneti,Rameti Lakshmi,Tiruveedhula Pavani**(5)**	A Systematic Review of Machine Learning Approaches for Predicting University Student Graduation Based on Educational Outcomes	Proceedings Of Confernce	3rd international conference on E merging trends in engineering and medical science		14-04-2026	International	979-8-3315-9383-4	10.1109/ICETEMS66917.2026.11469683	scopus				
20	**Dr.P.Changamma**, V.Srilakshmi,Sudhir Ponnapalli,Raghunadhareddi Dornala,Harish Aditya Anand Rao,Kambhapathi Rama Gopala Krishna Murthy(6)	Ensemble Quantum Key Distribution Framework for Practical Secure Communication Networks	Proceedings Of Confernce	3 rd Internatio0nal Conference on Machine Learning and Autonomous Systems			International	979-8-3315-7457-4	https://doi.org/10.1109/ICMLAS67792.2026.11483938	scopus				
21	**,Kichagari Sruthi**,Sanjay SureshV.Uma maheswari,Satheesh S,M.UmaDevi,P.JayaPriya(5)	Dynamic ML_DL Switching for Smart city Traffic Forecasting using Predictive -Adaptive Decision Algorithm	Proceedings Of Confernce	3rd international conference on E merging trends in engineering and medical science		14-04-2026	International	979-8-3315-9383-4	10.1109/ICETEMS66917.2026.11469431	scopus				

22	**D.S.Chandra mouli**,Mahammad Sohail Mulla,Kunnanan Reddy Chittepu,Mohammad Thoufik Shaik,Jagan Mohan Byneni,Bala Gangadhara Gutam(6)	Enhancing Predictive Cybersecurity Analytics Through the Convergence of Machine Learning and Generative A	Proceedings Of Confernce	2026 4th International Conference on Knowledge Engineering and Communication Systems (ICKECS)	CHIKBALAPUR,BANGALORE	26-05-2026	International	979-8-3315-4777-6	https://doi.org/10.1109/ICKECS70176.2026.11527908	scopus		NA		
23	**D.S.Chandra mouli,Pandurangaraju .B** Durgaprasad Reddy Kovuru,Pottypati Ganesh,Shaik Asifa,Koppala Dharani(6)	Interpretable Hybrid Machine Learning for Student Mental Health Screening	Proceedings Of Confernce	2026 4th International Conference on Knowledge Engineering and Communication Systems (ICKECS)	CHIKBALAPUR,BANGALORE	26-05-2026	International	979-8-3315-4777-6	https://doi.org/10.1109/ICKECS70176.2026.11527614	scopus		NA		
24	**Dr.D.Sarika,K. Karpagavalli,** M.Aravind reddy,T.Akanksha,D.Amrutha,A.Hanumanth reddy	Cognitive Dialogue System for Medical Decision Support Using NLP and LLMs	Proceedings Of Confernce	2026 4th International Conference on Knowledge Engineering and Communication Systems (ICKECS)		26-05-2026	International	979-8-3315-4777-6	https://doi.org/10.1109/ICKECS70176.2026.11528009	scopus	https://www.scopus.com/pages/publications/105041830824?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=52j_YsMAAAAJ&citation_for_view=52j_YsMAAAAJ:roLk4NBRz8UC		
25	**Dr.D.Sarika,S.** Adinarayana,Bvn Prasad Paruchuri,U. Sesadri,S. Hrushikesava Raju	A hybrid machine learning and gamified framework for effective student engagement in a metaverse learning environment	Proceedings Of Confernce	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	GNITS,HYDERABAD	05-05-2026	International	979-8-3315-8997-4	https://doi.org/10.1109/ICoECIT68303.2026.11496839	scopus	https://www.scopus.com/authid/detail.uri?authorId=58821341600	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=52j_YsMAAAAJ&citation_for_view=52j_YsMAAAAJ:hqOjcs7Dif8C		

26	**K. Karpagavalli, Dr.D.Sarika** L.Sravanthi,C.Susmitha, C.Durgeswar reddy,A.Uday kiran	Hybrid Deep Learning Framework for Precise Localization and Classification of Coffee Leaf Diseases	Proceedings Of Confernce	3rd international conference on E merging trends in engineering and medical science		14-04-2026	International	979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11470290	scopus		https://scholar.google.com/citations?view_op=view_citation&hl=en&user=UWyY2WsAAAAJ&citation_for_view=UWyY2WsAAAAJ:Tyk-4Ss8FVUC		
27	**K.Karpagavalli,** Navaneeth Annalamuni,Mounika Varimadugu,Mubeena Shaik	Prioritizing weather and non-weather factors for improved flight delay predictions	Proceedings Of Confernce	2ND INTERNATIONAL CONFERENCE ON Devices, Intelligent Systems and Communication (DISC-2024)	JBIT,HYDERABAD	08-04-2026	International	AIP Conf. Proc. 3376, 020008 (2026)	https://doi.org/10.1063/5.0330517	scopus		**NA**		
28	**D.Ramachandra,** Sammilitha Netur,Praveenkumar Reddy G.Sai Nikhitha S,Srinishan Reddy L	Dual Layer Predictive Syatem for cardiac Diseases Risk Evalution Using Machine Learning Approaches	Proceedings Of Confernce	3rd International Conference on Emerging trendsin engineering and medical sciences(ICETEMS 2026)		14/04/2026	International	979-8-3315-9383-4	10.1109/ICETEMS66917.2026.11469641	Scopus		**NA**		
29	**B.Naveen Kumar** K.Amrutha Reddy A.Asma B. Aakash Reddy V. Chandra Vamsi (5)	Advancing Tuberculosis Diagnosis and Treatment Planning with Robust AI Systems	Proceedings Of Confernce	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	GNITS,HYDERABAD	05-May-26	INTERNATIONAL	979-8-3315-8997-4	https://doi.org/10.1109/ICoECIT68303.2026.11497264	Scopus		**NA**		
30	**B.Naveen Kumar** D. Revathi S. Supraja,S. Praveen,K. Siva Sankar,**(5)**	MedFusion-OP: A Multi-Center Deep Learning Model for Accurate and Interpretable Osteoporosis Risk Prediction	Proceedings Of Confernce	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	GNITS,HYDERABAD	05-May-26	INTERNATIONAL	979-8-3315-8997-4	https://doi.org/10.1109/ICoECIT68303.2026.11496818	Scopus		**NA**		

31	**G.I.K Durga Bhavani,** Sai Thrinath,M. Ramprasad Reddy, S. Usman Basha, M.Venkatesh, B.Megya nayak	Comparative Analysis of PI and ANN-MPC for SynRM Control in Electric Vehicles	CONFERENCE	2025 International Conference on Computing Technologies (ICOCT) Bangalore, India	15-08-2025	INTERNATIONAL	979-8-3315-2794-5	SCOPUS	10.1109/ICOCT64433.2025.11118368	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=S53Ao2wAAAAJ&citation_for_view=S53Ao2wAAAAJ:qjMakFHDy7sC	IEEE	
32	**B.Dilip chakravarthy** D Suresh Redd y Bala Gangadhara Gutam S. Dilli Babu J Suresh Babu M. Sunil Kumar	Hybrid CNN-GMM Framework for Medicinal Plant Identification and Classification	proceedings of conference	2025 4th OPJU International Technology Conference (OTCON) on Smart Computing for Innovation and Advancement in Industry 5.0	14-07-2025	INTERNATIONAL	979-8-3315-3536-0	SCOPUS	10.1109/OTCON65728.2025.11071011	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=-Sbg37gAAAAJ&citation_for_view=-Sbg37gAAAAJ:d1gkVwhDpl0C	IEEE	
33	**D.S.Chandra mouli D** Suresh Redd y Bala Gangadhara Gutam S. Dilli Babu J Suresh Babu M. Sunil Kumar	A Machine Learning and Community Driven Approach for Feminist Cyber Resistance Framework to Mitigate Online Gender-Based Violence	proceedings of conference	2025 4th OPJU International Technology Conference (OTCON) on Smart Computing for Innovation and Advancement in Industry 5.0	14-07-2025	INTERNATIONAL	979-8-3315-3536-0	SCOPUS	10.1109/OTCON65728.2025.11070859	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=_W5qTmUAAAAJ&citation_for_view=_W5qTmUAAAAJ:2osOgNQ5qMEC	IEEE	
34	**Sankara Prasanna Kumar. M,V. Ratha** Siva Kumar. A. P, Amshavalli M, Ramarajan M, Mamta Bansal	Deep Ensemble Learning Model for Adaptive Entrepreneurship under Global Trade Policy Dynamics	proceedings of conference	Emerging Trends in Advancements and Applications of Computational Intelligence Techniques	03-06-2026	INTERNATIONAL	979-8-3315-4950-3	SCOPUS	DOI: 10.1109/ETAACT69135.2026.11541435	NA	NA	https://ieeexplore.ieee.org/document/11541435/	IEEE	

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(b.DS) 2. Details of Conference Proceddings published with ISSN From July 2025 to June 2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume& Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/International	ISSN	WoS/SCPUS / Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	**B.Venkatesu Goud, Fahimuddin Shaik,** S.Tejaswi, K.Tejasree, R.Vishnu Priya, and J. Siva Swathi **(6)**	AI & DS & ECE	Integration of Artificial Intelligence Techniques to Enhance the Agricultural Productivity and the Method of Farming; Opportunities and Challenges	Proceedings of First International Conference on Emerging Technologies and Computing Innovations (ICETCI-2025)	MG Aricent Educational Foundation, Nashik, India	(ICETCI-2025) 22-23 February	MG Aricent Educational Foundation, Nashik, India	Vol : 1	165–170	22-Oct-25	International	ISSN 3005-1770 (electronic)	SCOPUS	https://link.springer.com/chapter/10.1007/978-3-031-92854-3_20	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=kt3lNHsAAAAJ&citation_for_view=kt3lNHsAAAAJ:qjMakFHDy7sC
2	**P. Phanindra Kumar Reddy,** V. Madhu Sudhan Reddy, K. Nithin, P. Visweswara Rao, K. S. Maajid Hussain **(5)**	AI & DS	Crop Recommendation System Using Soil Content and Weather	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	G.Narayanamma Institute of Technology & Sciences-Hyderabad	(ICCCE 2024), held on July 19 and 20, 2024	G Narayanamma Institute of Technology & Science, Hyderabad, India	Vol : 1466	72-82	19-Nov-25	International	ISSN 1876-1119 (electronic)	SCOPUS	https://link.springer.com/chapter/10.1007/978-981-95-0269-1_8	NA	https://www.scopus.com/pages/publications/105023273496?origin=resultslist	NA
3	**B. Pandu Ranga Raju,** J. Hemalatha, S. Sai Keerthana, K. Madhavi, B. Himaja **(5)**	AI & DS	Advancements in Lung Cancer Prediction: An In-Depth Analysis and Optimization of Artificial Neural Network Algorithms	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	G.Narayanamma Institute of Technology & Sciences-Hyderabad	(ICCCE 2024), held on July 19 and 20, 2024	G Narayanamma Institute of Technology & Science, Hyderabad, India	Vol : 1466	98-108	19-Nov-25	International	ISSN 1876-1119 (electronic)	SCOPUS	https://link.springer.com/chapter/10.1007/978-981-95-0269-1_11	NA	https://www.scopus.com/pages/publications/105023274920?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&cstart=20&pagesize=80&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:roLk4NBRz8UC
4	**A. Ramesh Babu,** G. Shanmukha Sarma, G. Kiran Kumar, A. Madhu, S. Nayab Rasool **(5)**	AI & DS	Predicting Stock Prices with Advanced Deep Learning Technique: An LSTM-Based Approach	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	G.Narayanamma Institute of Technology & Sciences-Hyderabad	(ICCCE 2024), held on July 19 and 20, 2024	G Narayanamma Institute of Technology & Science, Hyderabad, India	Vol : 1466	116-122	19-Nov-25	International	ISSN 1876-1119 (electronic)	SCOPUS	https://link.springer.com/chapter/10.1007/978-981-95-0269-1_15	NA	https://www.scopus.com/pages/publications/105023274984?origin=resultslist	NA

5	**N. Swathi**, A. Harika, G. Gouthami, K. Amrutha Sree, D. Swetha (5)	AI & DS	Mediguard: Blockchain-Enhanced Security for the Internet of Medical Things	Proceedings of the 7th International Conference on Communications and Cyber Physical Engineering	G.Narayanamma Institute of Technology & Sciences-Hyderabad	(ICCCE 2024), held on July 19 and 20, 2024	G Narayanamma Institute of Technology & Science, Hyderabad, India	Vol : 1466	116-122	19-Nov-25	International	ISSN 1876-1119 (electronic)	SCOPUS	https://link.springer.com/chapter/10.1007/978-981-95-0269-1_13	NA	https://www.scopus.com/pages/publications/105023274351?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=uST8JywAAAAJ&citation_for_view=uST8JywAAAAJ:2osOgNQ5qMEC

Note:
Ensure that all entries are arranged in **chronological order (latest first)**, and **no field is left blank** — fill all fields **as applicable and available with valid sources**.
If any information is **not available**, clearly mention **"NA"** in that field.

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3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From July 2025 to June 2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	M. Radha Yeshwanth Vasa, Ashish Reddy Kumbham,Prasanthi Vallurupalli,**S. Ashok Kumar**,Dhivya A.**(6)**	A Hybrid Graph Neural Network-Based Reinforcement Learning Approach for Adaptive Cybersecurity Risk Management in FinTech	Conference	2025 International Conference on Computing Technologies & Data Communication (ICCTDC)	Hassan, India	01/07/2025	International	**Electronic ISBN:**979-8-3315-2798-3	https://doi.org/10.1109/ICCTDC64446.2025	SCOPUS	NA	https://www.scopus.com/pages/publications/105019049815?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=5FNn1nQAAAAJ&citation_for_view=5FNn1nQAAAAJ:WA5NYHcadZ8C	NA
2	**Dr. K. Uday Kumar Reddy**,Dr. Tadi Chandrasekhar, Dr. Venkata Kiran Kumar Ravi,Dr. V. Navin Ganesh, Dr Durgadevi P, Dr. Anil Kumar Lamba**(6)**	IoT-Enabled Graph Neural Networks and Deep Learning for Accurate Road Accident Detection and Analysis	Conference	2025 3rd World Conference on Communication & Computing (WCONF)	Raipur, India	01/07/2025	International	**Electronic ISBN:**979-8-3315-3045-7	https://doi.org/10.1109/WCONF64849.2025.11233480	SCOPUS	NA	https://www.scopus.com/pages/publications/105029713542?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=Wa4ohrYAAAAJ&sortby=pubdate&citation_for_view=Wa4ohrYAAAAJ:roLk4NBRz8UC	NA
3	Nalla Navatha, Kachi Anvesh,Akula Revanth,Swathi Singh,Cheruku Pramod,**A. Ramesh Babu (6)**	AI Driven Framework for Personalized Diabetes Assessment using Multimodal Clinical Data	Conference	2025 8th World Engineering Conference on Contemporary Technologies (WECON)	Rajpura, Punjab, India	10-10-2025 to 11-10-2025	International	Electronic ISBN:979-8-3315-9361-2	https://doi.org/10.1109/WECON68556.2025.11414577	SCOPUS	NA	https://www.scopus.com/pages/publications/105036667838?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=e2yTU2EAAAAJ&sortby=pubdate&citation_for_view=e2yTU2EAAAAJ:L8Ckcad2t8MC	NA
4	**Pandurangaraju B**, Fahimuddin Shiak, U.Bhoomika, U.Jahnavi, B.Thanmai, G.Chinnaobulesh **(6)**	Next-Generation Solar Panel Monitoring: A Deep Neural Network Framework for Fault Detection and Classification	Conference	Proceedings of the Third International Conference on Emerging Applications of Material Science and Technology (ICEAMST-2025)	R V College of Engineering, Bengaluru, India	03-11-2025	International	**Electronic ISBN:**979-8-3315-8707-9	https://doi.org/10.1109/ICEAMST67459.2025.11335747	SCOPUS	NA	https://www.scopus.com/pages/publications/105033613009?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:Se3iqnhoufwC	NA
5	**N. Swathi**, Fahimuddin Shiak, H. Keerthi, K. Dinesh Reddy, A. Mahammad Sohail, A. Khadeerulla **(6)**	Data Detox: A Smart and Visual System for Anomaly Detection and Interactive Cleaning	Conference	Proceedings of the Third International Conference on Emerging Applications of Material Science and Technology (ICEAMST-2025)	R V College of Engineering, Bengaluru, India	05-11-2025	International	**Electronic ISBN:**979-8-3315-8707-9	https://doi.org/10.1109/ICEAMST67459.2025.11336048	SCOPUS	NA	https://www.scopus.com/pages/publications/105033685829?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=uST8JywAAAAJ&citation_for_view=uST8JywAAAAJ:d1gkVwhDpl0C	NA

6	**Pandurangaraju B**, Fahimuddin Shiak, B. Prasanna Lakshmi, K.Vishnu Vardhan Reddy, P. Sumanth Kumar Reddy, D. Priyabi **(6)**	Flexible Optimal Graph-Based Multimodal Feature Selection for Multi-Class Neurodegenerative Disease Diagnosis	Conference	1s t International Conference on Advancement in Futuristic Technologies (ICAFT)	S.K.Balekundri Institute of Technology,Belgavi, Karnataka, India	19-12-2025	International	**Electronic ISBN:**979-8-3315-7159-7	https://doi.org/10.1109/ICAFT66710.2025.11452897	SCOPUS	NA	https://www.scopus.com/pages/publications/105037332898?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:3fE2CSJIrl8C	NA
7	**U. Naresh Kumar**, **A.Ramesh Babu**, Y. Yasmitha Reddy, K. Reddi Lakshmi, M. Venkata Siva, K. Sai Harshith **(6)**	Federated Learning–Driven Medical Chatbot for Privacy-Preserving Symptom Assessment	Conference	1s t International Conference on Advancement in Futuristic Technologies (ICAFT)	S.K.Balekundri Institute of Technology, Belgavi, Karnataka, India	19-12-2025	International	**Electronic ISBN:**979-8-3315-7159-7	https://doi.org/10.1109/ICAFT66710.2025.11452676	SCOPUS	NA	https://www.scopus.com/pages/publications/105037320703?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Jbx6S8AAAAAJ&citation_for_view=Jbx6S8AAAAAJ:jgBuDB5drN8C	NA
8	**S. Prasanna**, Fahimuddin Shaik, A. Charan Kumar Reddy, P. Kamaniya Sai, K. Chaitanya, M. Dinesh **(6)**	AI-Powered Reasoning Framework for Multilingual Fake News Detection	Conference	1s t International Conference on Advancement in Futuristic Technologies (ICAFT)	S.K.Balekundri Institute of Technology, Belgavi, Karnataka, India	19-12-2025	International	**Electronic ISBN:**979-8-3315-7159-7	https://doi.org/10.1109/ICAFT66710.2025.11453020	SCOPUS	NA	https://www.scopus.com/pages/publications/105037312275?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:Z5m8FVwuT1cC	NA
9	**B.Venkatesu Goud**, **P.Phanindra Kumar Reddy** , P.Sai Varshitha , T. Sruthi , N. Lakshmi Narayana Reddy , K. Harsha Vardhan Reddy **(6)**	Kidney Tumor Detection in CT Scans: Combining 3D CNN and Transformer Networks	Conference	International Conference on Smart Futuristic Technology (ICSFT)	Ghousia College of Engineering & Technology, Bengaluru, Karnataka,India.	02-01-2026	International	**Electronic ISBN:**979-8-3503-5707-3	https://doi.org/10.1109/ICSFT66733.2026.11506729	SCOPUS	NA	https://www.scopus.com/pages/publications/105041636247?origin=resultslist	NA	NA
10	**D Sai Shireesha** , **Pandurangaraju B** , G Naga Harshitha , G Vedavathi , B Naga Tharun Kumar , N Venkata Subbaiah **(6)**	A Comprehensive Survey on Paraphrase Identification Using Deep Learning Techniques	Conference	International Conference on Smart Futuristic Technology (ICSFT)	Ghousia College of Engineering & Technology, Bengaluru, Karnataka,India.	02-01-2026	International	**Electronic ISBN:**979-8-3503-5707-3	https://doi.org/10.1109/ICSFT66733.2026.11506923	SCOPUS	NA	https://www.scopus.com/pages/publications/105041619178?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:9ZlFYXVOiuMC	NA
11	**M. Joshna** , **N.Swathi** , C. Pranusha , B. Subramanyam , D. Rithesh , V. Raveendranath **(6)**	Privacy-Preserving Learning Approaches in 6G Networks: Benefits and Challenges	Conference	International Conference on Smart Futuristic Technology (ICSFT)	Ghousia College of Engineering & Technology, Bengaluru, Karnataka,India.	02-01-2026	International	**Electronic ISBN:**979-8-3503-5707-3	https://doi.org/10.1109/ICSFT66733.2026.11507490	SCOPUS	NA	https://www.scopus.com/pages/publications/105041646574?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=EETBOW4AAAAJ&citation_for_view=EETBOW4AAAAJ:roLk4NBRz8UC	NA
12	**Sanapalle Prasanna** , **B. Pandurangaraju** , Angadi Sirisha , Shaik Sana , Pallapa Venkatasunil , Utukuru Vijay Kumar **(6)**	Intelligent Assessment of Rehabilitation Outcomes in Substance Abuse Patients using Advanced Machine Learning Algorithms	Conference	International Conference on Smart Futuristic Technology (ICSFT) .	Ghousia College of Engineering & Technology, Bengaluru, Karnataka,India.	02-01-2026	International	**Electronic ISBN:**979-8-3503-5707-3	https://doi.org/10.1109/ICSFT66733.2026.11508110	SCOPUS	NA	https://www.scopus.com/pages/publications/105041598306?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:QIV2ME_5wuYC	NA
13	Bala Gangadhara Gutam, **Mundla Nandini**, J. Naveen Kumar, Tella Prameela, D Suresh Reddy, S Dillibabu **(6)**	Deep Learning Based Early Detection of Pneumonia Using Medical Imaging	Conference	7th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI 2026)	Purbanchal University, Nepal	07-01-2026 to 09-01-2026	International	Electronic ISBN:979-8-3315-5519-1	https://doi.org/10.1109/ICMCSI67283.2026.11412507	SCOPUS	NA	https://www.scopus.com/pages/publications/105034854038?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=9ouxxCYAAAAJ&sortby=pubdate&citation_for_view=9ouxxCYAAAAJ:5nxA0vEk-isC	NA

14	**P.Renuka** , Shaik Sameer Ahamad , P. Poojitha , A. V. Yeshwanth Goud, M. Yaswanth , P. Rakesh **(6)**	AI-Powered Multilingual Legal Document Summarizer with Risk Profiling and Jurisdiction-Aware Insights	Conference	16th International Conference on Cloud Computing , Data Science and Engineering (Confluence 2026)	Amity University, Uttar Pradesh-Noida	22-01-2026 to 23-01-2026	International	NA	NA	NA	NA	NA	NA	NA
15	**P.Phanindra Kumar Reddy,** K Sasidhar Reddy, C ChaithraVardhanReddy, P Vandana, G Madhusudhan, N Chandrakala **(6)**	Interpretable AI Enabled Solutions for Crop Selections,Yield Estimation and Rainfall Analysis in Precision Agriculture	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455755	SCOPUS	NA	https://www.scopus.com/pages/publications/105036952209?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=tbzxqwIAAAAJ&sortby=pubdate&citation_for_view=tbzxqwIAAAAJ:Zph67rFs4hoC	NA
16	**P.Phanindra Kumar Reddy**, K Sasidhar Reddy, G Homeshwar, A Madhuri Yasaswini, P Nithya Nandeep Kumar, R Vinesh Reddy **(6)**	Interpretable Machine Learning Approaches for Resilient DDoS Detection in Software-Defined Networks	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455883	SCOPUS	NA	https://www.scopus.com/pages/publications/105037011007?origin=resultslist	https://scholar.google.co.in/scholar?q=Interpretable+Machine+Learning+Approaches+for+Resilient+DDoS+Detection+in+Software-Defined+Networks+google+scholar+link&hl=en&as_sdt=0&as_vis=1&oi=scholart	NA
17	**P.Phanindra Kumar Reddy**, Fahimuddin Shaik , Guru Raghavendra Kamboji, Gayathri Kondaveeti , Guru Mahendra Kalluri, Mahesh Bollu **(6)**	ThreatClassifier: Real-Time Cyber Attack Classification using Hybrid ML Models	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455763	SCOPUS	NA	https://www.scopus.com/pages/publications/105036952560?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:AvfA0Oy_GE0C	NA
18	**P.Phanindra Kumar Reddy**, Fahimuddin Shaik , T. Pavani , B. Vijaya Durga, M. Sai , B. Sai Gowtham Reddy **(6)**	Balancing Transparency and Privacy with Explainable AI and Federated Learning in Fraud Detection	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455706	SCOPUS	NA	https://www.scopus.com/pages/publications/105036973360?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:URolC5Kub84C	NA
19	**B. Venkatesu Goud**, C. Venkata Bharani, S. Soban , E. Venkata Krishna, A. Naga Pranitheswar Reddy, C. Narendra Reddy **(6)**	A Fair and Efficient Pricing Framework for EV Battery Swapping based on Real-Time Life Cycle Prediction	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455651	SCOPUS	NA	https://www.scopus.com/pages/publications/105036971768?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=kt3lNHsAAAAJ&citation_for_view=kt3lNHsAAAAJ:UeHWp8X0CEIC	NA

20	**K. Uday Kumar Reddy**, Fahimuddin Shaik , Miriyam Rahithya, Bhemesetty Sumanth, Shaik Umar Basha , Mallela Sheshadri **(6)**	Intelligent Grading System for Handwritten Descriptive Answers using NLP	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455809	SCOPUS	NA	https://www.scopus.com/pages/publications/105036985389?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:epqYDVWIO7EC	NA
21	**P.Hari Krishna, K. Uday Kumar Reddy** , G.Leela Aravinda, V.Anjali, C. Bhavana Reddy, S.K. Abdur Rehman **(6)**	Detection of Algorithmic Bias in AI-based Recruitment Systems using Explainable AI	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455654	SCOPUS	NA	https://www.scopus.com/pages/publications/105036961961?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=Wa4ohrYAAAAJ&sortby=pubdate&citation_for_view=Wa4ohrYAAAAJ:0EnyYjriUFMC	NA
22	**A. Ramesh Babu, Pandurangaraju.B**, D. Deepika, K. Hemanth Kumar, S.M. Mahammad Mubarak, A.C.Guru Balaji **(6)**	Machine Learning Framework for Early Detection and Prediction of Sleep Disorders using Multimodal Health Data	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455868	SCOPUS	NA	https://www.scopus.com/pages/publications/105037004242?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:ULOm3_A8WrAC	NA
23	**K. Uday Kumar Reddy**, Fahimuddin Shaik , Y.Y. Mani Sankar Reddy, C. Dharma Teja Varma, S. Hammad Ali Khan **(6)**	MediAI: An Intelligent Healthcare System for Disease Prediction and Patient Support	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455801	SCOPUS	NA	https://www.scopus.com/pages/publications/105037016587?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=Wa4ohrYAAAAJ&sortby=pubdate&citation_for_view=Wa4ohrYAAAAJ:5nxA0vEk-isC	NA
24	**P. Renuka**, S. Fahimuddin, Shaik Mahammed Saif, Simhadri Bathula, Shivani Mallela, Chandrika Padamatinti **(6)**	A Semi-Supervised Hybrid Deep Learning Model with Mobile Net-GCN for Interpretable Diabetic Retinopathy Detection	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)	Jawaharlal College of Engineering and Technology Ottapalam, Kerala, India	04-02-2026	International	**Electronic ISBN:**979-8-3315-9654-5	https://doi.org/10.1109/IDCIoT67589.2026.11455667	SCOPUS	NA	https://www.scopus.com/pages/publications/105036950465?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:EkHepimYqZsC	NA
25	**D.Sai Shireesha,** Fahimuddin Shaik, Akhila Juturu, Jaya Chaitanya Reddy Kayala, Chandra Sekhar Reddy Kollamoram,Alekhya Naguru **(6)**	Sky Shield: ML-Driven DDoS for Detection &Defense in Multi-UAV Communication Networks	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11470300	SCOPUS	NA	https://www.scopus.com/pages/publications/105038053687?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:ML0RJ9NH7IQC	NA

26	**P. Mabjan , Pandurangaraju.B** ,Fahimuddin Shaik, K. Gouthami , G. Harinath Yadav , P. Mahammad Haneef **(6)**	Attention-Based Feature Fusion For Realistic And Personalized Facial Expression Generation	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469594	SCOPUS	NA	https://www.scopus.com/pages/publications/105038006007?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:KlAtU1dfN6UC	NA
27	**S.Ashok Kumar, A.Ramesh Babu** , A.Hima Sree, C.Amrutha, E.Bhavani , S.Althaf **(6)**	XAI for Agriculture: Low-Complexity AI Solutions for Real-Time Plant Health Monitoring	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469419	SCOPUS	NA	https://www.scopus.com/pages/publications/105038014217?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=5FNn1nQAAAAJ&sortby=pubdate&citation_for_view=5FNn1nQAAAAJ:BUYA1_V_uYcC	NA
28	**M.Babavali, Pandurangaraju B.** , J.Narasimha ,C.H.Pavan Kumar ,D.Rohith ,D.S Mahammad Saifulla **(6)**	ChurnShield: An Intelligent Framework for Early Detection and Prevention of Telecom Customer Churn	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469576	SCOPUS	NA	https://www.scopus.com/pages/publications/105038003878?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:kNdYIx-mwKoC	NA
29	**A.Ramesh Babu , P.Phanindra Kumar Reddy** , O.Navya , P.Srinuvasulu , G.Roopa Devi , A.Pavan Kumar **(6)**	An Interpretable AI-Based Multimodal Approach for Lung Cancer Screening Using CT Scans and Clinical Data	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469225	SCOPUS	NA	https://www.scopus.com/pages/publications/105038046904?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=tbzxqwIAAAAJ&sortby=pubdate&citation_for_view=tbzxqwIAAAAJ:YOwf2qJgpHMC	NA
30	**S.Ashok Kumar, Pandurangaraju.B**, A. Praneeth Reddy, Y.Nandhitha, S.Venkata Praballika, U.Pavan Kalyan **(6)**	SpamSentry: Real Time Detection of Spam on Social Media using Intelligent Monitoring Tools	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469282	SCOPUS	NA	https://www.scopus.com/pages/publications/105038043168?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:_kc_bZDykSQC	NA
31	**N.Swathi , M.Joshna** , M.Prathyun Kumar Reddy , P.Suresh Babu ,P.Supraja , V.Revanth Kumar **(6)**	Start-Wise Ai: Predicting Startup Success or Failure Using Data-Driven Insights	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469447	SCOPUS	NA	https://www.scopus.com/pages/publications/105038006086?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=EETBOW4AAAAJ&citation_for_view=EETBOW4AAAAJ:UebtZRa9Y70C	NA
32	**Pandurangaraju B. , S.Ashok Kumar**, Z.Venkata Rajesh, G. Santhosh, N.Guru Vethaswini, M.Karthik Reddy **(6)**	A Comparative Study of Lightweight Deep Learning Models for Real-Time Wildfire Detection with Explainable AI	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469436	SCOPUS	NA	https://www.scopus.com/pages/publications/105038036802?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:4DMP91E08xMC	NA

33	**S.Ashok Kumar ,** Fahimuddin Shaik ,N.Sumalatha ,S.Nanda Kumar Reddy ,Y.Ganga Bhavani ,A.Balaji Kumar Reddy **(6)**	Deep Learning Models for Smart Farming:Crop Monitoring and Yield Prediction with MobileNet	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469375	SCOPUS	NA	https://www.scopus.com/pages/publications/105038059022?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=5FNn1nQAAAAJ&sortby=pubdate&citation_for_view=5FNn1nQAAAAJ:Z5m8FVwuT1cC	NA
34	**M.Joshna,** Fahimuddin Shaik **,Pandurangaraju B.**,Sirigireddy Akhila ,Shaik Abdul Azizes,Doddi Bala Nithin Kumar Yadav **(6)**	SmartVisionGuard: AI-Powered Weapon Detection and Crowd Monitoring with Integrated Surveillance Intelligence	Conference	2026, 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)	Yeshvantarao Chavan College of Engineering, Nagpur- India	06-03-2026 to 07-03-2026	International	**Electronic ISBN:**979-8-3315-9383-4	https://doi.org/10.1109/ICETEMS66917.2026.11469329	SCOPUS	NA	https://www.scopus.com/pages/publications/105038039016?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:4TOpqqG69KYC	NA
35	M Hari Haranadha Sastry, M Sharwani, Ch Ram Mohan, **C Siva Krishnaiah**, Venkata Ramana N, R Kiran Kumar **(6)**	Feature-Optimised Gradient Boosting for Accurate and Efficient Network Intrusion Detection	Conference	Proceedings of the International Conference on Machine Learning and Autonomous Systems (ICMLAS-2026)	Stamford International University, Bangkok-Thailand	11-03-2026 to 13-03-2026	International	**Electronic ISBN:**979-8-3315-7457-4	https://doi.org/10.1109/ICMLAS67792.2026.11483803	SCOPUS	NA	https://www.scopus.com/pages/publications/105038758150?origin=resultslist	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=uVtUNPUAAAAJ&sortby=pubdate&citation_for_view=uVtUNPUAAAAJ:sSrBHYA8nusC	NA
36	**S. Prasanna,** Fahimuddin Shaik, A.Venkata Anand Kumar Reddy, C. Navitha ,S. Venkata Siva Reddy , M. Venkata Subhash **(6)**	A Hybrid Machine Learning Approach For Accurate Classification Of Heart Failure	Conference	2026 IEEE International Conference for Convergence in Computing Technology (I3CTCON)	Siddhanth Group of Institutions, Maharastra	13-03-2026 to 15-03-2026	International	**Electronic ISBN:**979-8-3315-7656-1	https://doi.org/10.1109/I3CTCON68242.2026.11507353	SCOPUS	NA	https://www.scopus.com/pages/publications/105041606668?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=B4I1BEEAAAAJ&sortby=pubdate&citation_for_view=B4I1BEEAAAAJ:L7CI7m0gUJcC	NA
37	**S Ashok Kumar, Pandurangaraju B,** Fahimuddin Shaik, K Durga Sireesha, V. Akash, B.Chennakesava Reddy **(6)**	AI Models for Healthcare Continuous Diagnostic Efficiency and Treatment Optimization	Conference	2026 IEEE International Conference for Convergence in Computing Technology (I3CTCON)	Siddhanth Group of Institutions, Lonavala, Maharastra	13-03-2026 to 15-03-2026	International	**Electronic ISBN:**979-8-3315-7656-1	https://doi.org/10.1109/I3CTCON68242.2026.11507681	SCOPUS	NA	https://www.scopus.com/pages/publications/105041677804?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:mVmsd5A6BfQC	NA
38	**Pandurangaraju B., S. Ashok Kumar,** Aritakula Haarika, Pathakunta Mahendra, P. Mohammed Arshad Ali, Y. Keerthi **(6)**	Retinal Disease Diagnosis Using Multimodal Deep Learning with Clip-Based Fusion	Conference	2026 International Conference on Computing Theory and Wireless Communications (ICCTWC)	DKTE, Maharastra Section	01-04-2026 to 02-04-2026	International	**Electronic ISBN:**979-8-3315-7660-8	https://doi.org/10.1109/ICCTWC68241.2026.11583295	SCOPUS	NA	https://www.scopus.com/pages/publications/105045462787?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&citation_for_view=ayTzrB0AAAAJ:mVmsd5A6BfQC	NA
39	**M. Baba Valli, Pandurangaraju B.**, C. Pavani, N. Suhas Kalyan, S. Rahamathulla and K. Yuvaraju **(6)**	Minds at School: Advancing Cognitive Science by Measuring and Modeling Human Learning In Situ — Focused on In-Context Educational Studies	Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur	10-04-2026 to 11-04-2026	International	NA	NA	NA	NA	NA	NA	NA

40	**A. Ramesh Babu, S. Ashok Kumar**, V. Suvarna, Y. Lakshmikanth Reddy, Y. Dinesh Kumar and K. Manoj Kumar Reddy **(6)**	Machine Learning-Based Cellular Traffic Prediction Using Data Reduction Techniques	Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur	10-04-2026 to 11-04-2026	International	NA	NA	NA	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=qgJV2sIAAAAJ&sortby=pubdate&citation_for_view=qgJV2sIAAAAJ:OU6Ihb5iCvQC	NA
41	**B. Venkatesu Goud, P. Phanindra Kumar Reddy**,P.M. Maneesh,R. Kalyani,D. Indhu and D. Mahammad Rafi **(6)**	Tomato Quality Classification -A Deep Learning Approach to Classify Tomato	Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur	10-04-2026 to 11-04-2026	International	NA	NA	NA	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=kt3lNHsAAAAJ&citation_for_view=kt3lNHsAAAAJ:Tyk-4Ss8FVUC	NA
42	**M. Nandini, Pandurangaraju B**, M. Shyam Sundhar Reddy, G. Poojitha, M. Venkata Kalyan, and N. Venkata Subramanya Yaswanth **(6)**	Smart Interview: NLP-Based Adaptive Interview Simulation and Performance Feedback	Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur	10-04-2026 to 11-04-2026	International	NA	NA	NA	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&cstart=20&pagesize=80&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:qUcmZB5y_30C	NA
43	**A. Ramesh Babu, S. Ashok Kumar**, B. Manaswitha, B. Bhanu, P. Gayathri and P. Hari **(6)**	AI Enhanced Placement and Career Guidance System: Leveraging NLP For Personalized Student Profiling and Recruitment Intelligence	Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur	10-04-2026 to 11-04-2026	International	NA	NA	NA	NA	NA	https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=qgJV2sIAAAAJ&sortby=pubdate&citation_for_view=qgJV2sIAAAAJ:p2g8aNsByqUC	NA
44	**N. Swathi, Pandurangaraju B**, A. Sneha Latha Reddy, K. Ganga Mahesh,M. Om Guru Sai Natha Reddy, B. Devendra Yadav **(6)**	Machine and Deep Learning Models for Stress Detection Using Multimodal Physiological Data	Conference	International Conference on Engineering Innovations for Sustainable Development (ICEISD 2026)	Chaitanya Bharathi Institute of Technology (CBIT), Proddatur	10-04-2026 to 11-04-2026	International	NA	NA	NA	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&pagesize=80&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:IWHjjKOFINEC	NA
45	**U. Naresh Kumar, A.Ramesh Babu**, S. Jeba Nasrath, A. Lakshmi Thresa, Y. Akhil Kumar Reddy, M. Gnaneswar Reddy **(6)**	Physiological Signal–Driven Modeling of Pain Perception Using Advanced Neural Architectures	Conference	IEEE International Conference on Emerging Technologies in Engineering Applications (ICETEA 2026)	Sri Manakula Vinayagar engineering College, Puducherry	14-05-2026 to 15-05-2026	International	NA	NA	NA	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Jbx6S8AAAAAJ&sortby=pubdate&citation_for_view=Jbx6S8AAAAAJ:BzfGm06jWhQC	NA
46	**K. Uday Kumar Reddy**, Fahimuddin Shaik, Munagapati Mounika, Shaik Afridi ,Chappidi Hemanth Reddy Bojja Guruvaiah **(6)**	AI Based Automated Video Dubbing for Indian Regional Languages	Conference	International Conference on Wireless, Antenna and Microwave Symposium (WAMS)	BVRIT, Hyderabad	10-06-2026 to 13-06-2026	International	NA	NA	NA	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Wa4ohrYAAAAJ&cstart=20&pagesize=80&sortby=pubdate&citation_for_view=Wa4ohrYAAAAJ:MXK_kJrjxJIC	NA

47	**M. Joshna , P. Phanindra Kumar Reddy** , G.Venkata Narayana ,B. Indu Priya ,K. Naga Mohan ,G. Sai Pavan **(6)**	Real-Time Pridiction of Medicinal Herb Plants Using Deep Learning	Conference	International Conference on Wireless, Antenna and Microwave Symposium (WAMS)	BVRIT, Hyderabad	10-06-2026 to 13-06-2026	International	NA	NA	NA	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=EETBOW4AAAAJ&citation_for_view=EETBOW4AAAAJ:0EnyYjriUFMC	NA
48	**M. Nandini, P. Phanindra Kumar Reddy , B. Venkatesu Goud,** V. Sreelatha ,M. Charan ,K. Silpa **(6)**	Student Mental Health Analysis and Prediction Using Machine Learning	Conference	International Conference on Wireless, Antenna and Microwave Symposium (WAMS)	BVRIT, Hyderabad	10-06-2026 to 13-06-2026	International	NA	NA	NA	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=0z4osAQAAAAJ&citation_for_view=0z4osAQAAAAJ:MXK_kJrjxJIC	NA
49	**B. Pandurangaraju**, N. Muraly, T, Logasundari,I. Kumaraswamy, S. Suresh **(5)**	Design and Implementation of Modern IoT-based Solar Powered PV Pumping Systems for Agricultural Applications	Conference	Book Title: Advanced Pathways in Electrical, Communication, and Automation, Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	K.Ramakrishnan College of Technology, Samayapuram, Tiruchirapalli	12-05-2026	International	eBook ISBN 9781003773962	https://doi.org/10.1201/9781003773962-39	SCOPUS	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:8k81kl-MbHgC	39
50	**B Pandurangaraju**, N Muraly, Balaraju Vijayalakshmi, I Kumaraswamy, Suresh Srinivasan **(5)**	Prediction of Heart-Attack Stroke and Recommendation System using IoT Network	Conference	Book Title: Advanced Pathways in Electrical, Communication, and Automation, Reconfigurable Systems, Smart Energy, and AI for Industry 5.0	K.Ramakrishnan College of Technology, Samayapuram, Tiruchirapalli	12-05-2026	International	eBook ISBN 9781003773962	https://doi.org/10.1201/9781003773962-52	SCOPUS	NA	NA	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ayTzrB0AAAAJ&sortby=pubdate&citation_for_view=ayTzrB0AAAAJ:5nxA0vEk-isC	52
51	**U. Naresh Kumar**, T. Gangadharam, K. S. S. Narayana, Jafersadhiq A., M. Sucharitha, Abhishek Tripathi **(6)**	Predictive Modeling of Credit Risk in Banking Systems Using a Hybrid SVM–Random Forest Approach	Conference	Fifth International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT- 2025)	MANDYA, India	12-09-2025 to 13-09-2025	International	**Electronic ISBN:**979-8-3315-3200-0	https://doi.org/10.1109/ICERECT65215.2025.11378182	SCOPUS	NA	https://www.scopus.com/pages/publications/105034865031?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=Jbx6S8AAAAAJ&sortby=pubdate&citation_for_view=Jbx6S8AAAAAJ:43bX7VzcjpAC	NA
52	A. Balamurugan, G. Sivakumar, **Palagiri Mabjan**, Bollam Srivani, Sabina A. Nair, Naveen Nandal **(6)**	Hybrid Knowledge Graph and Graph Neural Network Framework for Context-Aware Consumer Behavior Modeling in E-commerce	Conference	2026 1st International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETAACT)	Bhubaneswar, India	10-04-2026 to 11-04-2026	International	**Electronic ISBN:**979-8-3315-4949-7	https://doi.org/10.1109/ETAACT69135.2026.11541466	SCOPUS	NA	https://www.scopus.com/pages/publications/105042187556?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=hMcyaswAAAAJ&sortby=pubdate&citation_for_view=hMcyaswAAAAJ:9yKSN-GCB0IC	NA

53	Shikha Khullar, K. M. P. Brundha, Mettu Jhansi Rani, **Palagiri Mabjan**, P. Sudheer, Chennaiah Kate **(6)**	Edge-Assisted Network Traffic Anomaly Detection Using Random Forest for Autonomous Systems	Conference	2026 2nd International Conference on Intelligent Systems and Computational Networks (ICISCN)	Bidar, India	24-04-2026 to 25-04-2026	International	**Electronic ISBN:**979-8-3315-8871-7	https://doi.org/10.1109/ICISCN67954.2026.11566561	SCOPUS	NA	https://www.scopus.com/pages/publications/105043759374?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=r5DDHOYAAAAJ&sortby=pubdate&citation_for_view=r5DDHOYAAAAJ:O3NaXMp0MMsC	NA

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(b.ML) 2. Conference Proceedings with ISSN and Indexed in Scopus from 01/07/2025 to 30/06/2026

S. No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume& Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National /International	ISSN	WoS/ SCOPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	**J. Krishna** Siddigari Harshitha Giddaluri Kamalesh Byala Kiran Kumar Tanikanti Aarthi Sree Janapati Hari Haran (6)	AI & ML	AI-Driven Cyber Resilience Framework for Cloud Environments: Advanced Intrusion Detection and Threat Prevention	2026 International Conference on Computing, Electronics & Communications Engineering (ICCECE)	Tecno India University, West Bengal	06-07 February 2026	Kolkata, India	Nil	1-7	04-2026	International	2768-0576	Scopus & Google Scholar	10.1109/ICCECE69715.2026.11493037	-NA-	https://ieeexplore.ieee.org/abstract/document/11493037	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=I2a263oAAAAJ&citation_for_view=I2a263oAAAAJ:mB3voiENLucC
2	**Krishna J.** Eswar, Ravipati Areef Basha S.M.D. Jagan M. Harsha Niketh R. (5)	AI & ML	Deep Learning Models for Accurate and Efficient Classification of Brain Disorders Using MRI Scans	15th International Conference on Recent Trends in Artificial Intelligence and Data Sciences, CONFLUENCE 2025	Amity School of Engineering and Technology, Noida	16 January 2025 - 17 January 2025	New Delhi	NIL	355 - 369	05-2026	International	1876-1100	Scopus & Google Scholar	10.1007/978-981-95-4452-3_31	-NA-	https://www.scopus.com/pages/publications/105039473822?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=I2a263oAAAAJ&citation_for_view=I2a263oAAAAJ:-f6ydRqryjwC

3	**T. Hari Krishna** M. Guru Naga Jyothi S. A. Rizwana A. Mounika B. Bhavitha K. Madhurima (6)	AI & ML	Optimizing Crop Yield Forecasts Through Machine Learning Integration of Meteorological and Pesticide Data	15th International Conference on Recent Trends in Artificial Intelligence and Data Sciences, CONFLUENCE 2025	GM UNIVERSITY, Davanagere, Karnataka 577006	16 January 2025 - 17 January 2025	New Delhi	NIL	325 - 335	12-2025	International	1876-1100	Scopus & Google Scholar	10.1007/978-981-96-9203-3_27	-NA-	https://www.scopus.com/pages/publications/105023318667?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Optimizing+Crop+Yield+Forecasts+Through+Machine+Learning+Integration+of+Meteorological+and+Pesticide+Data&btnG=
4	Phole Kamal Bhaurao S.B.Sawant Umayal AR **Swarna Surekha** Mirza Samiulla Beg Umang Gupta (6)	AI & ML	Multi-Agent Reinforcement Learning Optimizing Cloud Resource Scheduling Efficiently	2025 Tenth International Conference on Science Technology Engineering and Mathematics (ICONSTEM)	Chennai, India	06-07 November 2025	Chennai, India	Nil	1-7	02-2026	International	2996-2986	Scopus & Google Scholar	10.1109/ICONSTEM65670.2025.11374729	-NA-	https://www.scopus.com/pages/publications/105034484607?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Multi-Agent+Reinforcement+Learning+Optimizing+Cloud+Resource+Scheduling+Efficiently&btnG=
5	B. Venkata Sivaiah **C. V. Lakshmi Narayana** Konga Lakshmi Prasanna Duggasani Vinathi KS Hemanth Kottamidde Vishnu Vardhan (6)	AI & ML	Deep Fake Image Detection Using Deep Learning	2025 6th International Conference for Emerging Technology (INCET)	BELGAUM, India	#######	BELGAUM, India	Nil	1-8	09-2025	International	2996-4490	Scopus & Google Scholar	10.1109/INCET64471.2025.11140346	-NA-	https://www.scopus.com/pages/publications/105016777734?inward	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=%22Deep+Fake+Image+Detection+Using+Deep+Learning%22&btnG=
6	**T. Hari Krishna** Rupasree. K Bhavya. G Rajesh. K Arun Kumar. B Rajesh. D (6)	AI & ML	AI Smart Prescription Guide For Safer and Clearer Healthcare	2026 International Conference on Computing, Electronics & Communications Engineering (ICCECE)	Kolkata, India	06-07 February 2026	Kolkata, India	NIl	1-7	04-2026	International	2768-0576	Scopus & Google Scholar	10.1109/ICCECE69715.2026.11493091	NA	https://ieeexplore.ieee.org/abstract/document/11493091	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=AI+Smart+Prescription+Guide+For+Safer+and+Clearer+Healthcare&btnG=

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(c. ML) 3. Details of Papers Presented / Published in Proceedings of the Conference/ Book Chapter with ISBN. from 01/07/2025 to 30/06/2026

S. No	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/ Internationa l	ISBN No.	Paper URL (DOI)	WoS/ SCOPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	**N. Penchalaiah** M. Malathi Ekaterina Kalinskaya Vijayalakshmi Senniappan Sridhar D Sandeep Gupta (6)	Improving Global Supply Chain Security and Transparency through Blockchain and IoT Integration with Deep LSTM and RNN	Conference	2025 3rd International Conference on Data Science and Information System (ICDSIS)	Hassan, India	10-07-2025	Internalti onal	979-8-3315-4265-8	https://ieeexplore.ieee.org/document/11070523	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105011824552?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Improving+Global+Supply+Chain+Security+and+Transparency+through+Blockchain+and+IoT+Integration+with+Deep+LSTM+and+RNN&btnG=	NA
2	C. Anjanamma K.A. Jyotsna B. Sravani K. Shilpa **C V Lakshmi Narayana** Kanakaprabha. S (6)	Predicting Childhood Anemia Prevalence with Machine Learning: Evidence from Global Nutritional Data	Conference	2025 6th International Conference on Inventive Research in Computing Applications (ICIRCA)	Coimbatore, India,	31/07/2025	Internalti onal	979-8-3315-2142-4	https://ieeexplore.ieee.org/document/11089631/authors#authors	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105013617394?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Predicting+Childhood+Anemia+Prevalence+with+Machine+Learning%3A+Evidence+from+Global+Nutritional+Data&btnG=	NA
3	Naveen Pol **C. V. Lakshmi Narayana** Sweta Priya E. S. Vinothkumar B. Rajesh Kumar S. Muthurajan (6)	An Efficient Classification Algorithms for Prediction of Employee Performance Based on Mask Rcnn-Bilstm Technique	Conference	2025 3rd International Conference on Data Science and Network Security (ICDSNS)	Tiptur, India	29/09/2025	Internalti onal	979-8-3315-3679-4	https://ieeexplore.ieee.org/document/11168777	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105019039263?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=An+Efficient+Classification+Algorithms+for+Prediction+of+Employee+Performance+Based+on+Mask+Rcnn-Bilstm+Technique&btnG=	NA

4	Deepika K R Vijayarani N Rushi Raval **Swarna Surekha** Karthigai Priya G Keerthana N V (6)	Papvision: Nextgen Deep Learning Diagnosis of Cervical Cancer from Papanicolaou Smear Test	Conference	2nd International Conference on Computing and Data Science, ICCDS 2025	Hybrid, Chennai	03-11-2025	Internalti onal	979-833159668-2	10.1109/ICCDS64403.2025.11209689	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105023828529?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Papvision%3A+Nextgen+Deep+Learning+Diagnosis+of+Cervical+Cancer+from+Papanicolaou+Smear+Test&btnG=	NA
5	**Harikrishna, T.** Nandini, G. Peerambi, G. Manasa, N. Pallavi, B (5)	Innovative Deep Learning Framework for Accurate Fault Diagnosis in Industrial Systems	Conference	7th International Conference on Communications and Cyber Physical Engineering. ICCCE 2024	Hyderabad, India	19/11/2025	Internalti onal	978-981-95-0269-1	https://doi.org/10.1007/978-981-95-0269-1_31	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105023273922?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Innovative+Deep+Learning+Framework+for+Accurate+Fault+Diagnosis+in+Industrial+Systems&btnG=	NA
6	Kavitha T. Kalyani, Godavarthi Sesha Rudra **Harikrishna T.** Dharavatu, Mangamma Mohan, Ram Murthy K.V.S.S.R. (6)	Optimizing Cloud Performance and Energy Efficiency using Proximal Policy Optimization in Reinforcement Learning Techniques	Conference	6th International Conference on Electronics and Sustainable Communication Systems, ICESC 2025	Coimbatore	12-12-2025	Internalti onal	979-833155503-0	10.1109/ICESC65114.2025.11212296	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105022616010?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Optimizing+Cloud+Performance+and+Energy+Efficiency+using+Proximal+Policy+Optimization+in+Reinforcement+Learning+TechniquesEfficiently%22&btnG=	NA
7	Kunduru Gayathri Ch. Prathima **N. Siva** Bingi Manorama Devi B. Sunil Kumar M. Ramu (6)	An Approach to Image Blur Detection and Restoration Using Generative Adversarial Networks	Conference	2025 IEEE International Conference on Advanced Computing Technologies (ICACT)	Tirupati, India	28/01/2026	Internalti onal	979-8-3315-9002-4	10.1109/ICACT67549.2025.11351492	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105033612679?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=An+Approach+to+Image+Blur+Detection+and+Restoration+Using+Generative+Adversarial+Networks+&btnG=	NA

8	. **Krishna J.** Jain, Jaya Arun Raj S.R. Josephson, P. Joel Kumar, G. Pavan Reddy, P. Dileep Kumar (6)	Real-Time Road Accident Prediction in Smart Cities using a Hybrid Random Forest–LSTM Model	Conference	2025 International Conference on Sustainable Communication Networks and Application (ICSCN)	Theni, India	17/02/2026	Internaltional	979-8-3315-9420-6	10.1109/ICSCN67106.2025.11308195	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105032720137?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=I2a263oAAAAJ&citation_for_view=I2a263oAAAAJ:IWHjjKOFINEC	NA
9	Sali, Ramaiah **Harikrishna T. (2)**	Quantum-Enhanced Federated Learning with Explainable Multimodal Intelligence for Heart Disease Risk Stratification, Progression Analysis, and Personalized Care	Conference	9th International Conference on Electronics, Communication and Aerospace Technology, ICECA 2025	Coimbatore	07-02-2026	Internaltional	979-833159929-4	10.1109/ICECA66444.2025.11383196	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105034873146?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Quantum-Enhanced+Federated+Learning+with+Explainable+Multimodal+Intelligence+for+Heart+Disease+Risk+Stratification%2C+Progression+Analysis+and+Personalized+Care&btnG=	NA
10	Hemanand Chittapragada Gangapuram Srikanth Mohammad Rafeek Khan P. Chandra Sekhar **C. V. Lakshmi Narayana** Ayushi (6)	Dynamic Anomaly Detection for Fire Alarm Fault Identification Using a Fuzzy-CNN Based Approch	Conference	2025 International Conference on Computing and Communications (COMPUTINGCON)	Talegaon, India	03-02-2026	Internaltional	979-8-3315-2253-7	10.1109/COMPUTINGCON64838.2025.11377461	Scopus and Google Scholar	NA	https://www.scopus.com/inward/record.url?eid=2-s2.0-105035504866&partnerID=MN8TOARS	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Dynamic+Anomaly+Detection+for+Fire+Alarm+Fault+Identification+using+a+Fuzzy-CNN+Based+Approach&btnG=	NA
11	**T Hari Krishna** P Bhargavi G Hemanth Reddy K Venkata Guna Sree M Babul Reddy P Kiran Kumar Reddy (6)	Classification Techniques in Deep Learning for Automated Diabetic Retinopathy Diagnosis	Conference	2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)	Coimbatore, India	13/02/2026	Internaltional	979-8-3315-9929-4	10.1109/ICECA66444.2025.11383025	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11383025	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Classification+Techniques+in+Deep+Learning+for+Automated+Diabetic+Retinopathy+Diagnosis&btnG=	NA

12	**Krishna J.** Saketh B. Sneha P. Sravanthi I. Subramanyeswar Reddy I. Nithin Kumar K. (6)	Real-Time Handwritten Digit Recognition Using Explainable and Deployable CNN Models	Conference	4th International Conference on Intelligent Data Communication Technologies and Internet of Things, IDCioT 2026	Ottapalam	21/04/206	Internalti onal	979-833159654-5	10.1109/IDCIoT67589.2026.11455721	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105037004138?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=I2a263oAAAAJ&citation_for_view=I2a263oAAAAJ:hC7cP41nSMkC	NA
13	**C. V. Lakshmi Narayana** C. U. Geethika B. Sarala S. Nishetha A. S. Sumanth T. H. Raju (6)	An Integrated Machine Learning Framework for Multi-Disease Prediction, Medication Reminders & Doctor-Patient Interaction	Conference	2026 Contemporary Computing Innovations Conference (CCIC)	Tirupati, India	30/04/2026	Internalti onal	979-8-3195-2966-4	10.1109/CCICC68129.2026.11486062	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11486062	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=An+Integrated+Machine+Learning+Framework+for+Multi-+Disease+Prediction%2C+Medication+Reminders+%26+Doctor-Patient+Interaction&btnG=	NA
14	T Lakshmi **T Harikrishna (2)**	KDiME-FedX: An Explainable Multimodal Federated Framework for Personalized Kidney Disease Prognosis and Adaptive Care Planning	Conference	2026 Innovations in Machine, Engineering, and Digital Conference (IMED)	Kota Kinabalu, Malaysia	22/04/2026	Internalti onal	979-833156997-6	10.1109/IMED68921.2026.11484456	Scopus and Google Scholar	NA	https://www.scopus.com/pages/publications/105038353679?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=KDiME-FedX%3A+An+Explainable+Multimodal+Federated+Framework+for+Personalized+Kidney+Disease+Prognosis+and+Adaptive+Care+Planning&btnG=	NA

15	Lakshmi H N **C.V. Lakshmi Narayana** **J. Krishna** Akula Vishalakshi **Swama Surekha** B. Venkata Sivaiah (6)	AI-Powered Financial Consultant for Secure and Intelligent Personal Finance Management	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	Hyderabad, India	05-05-2026	Internalti onal	979-8-3315-8997-4	10.1109/ICoECIT68303.2026.11497606	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11497606	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=AI-Powered+Financial+Consultant+for+Secure+and+Intelligent+Personal+Finance+Management&btnG=	NA
16	**C. V. Lakshmi. Narayana** Revathy.K Karthik.D U. Sree.P Sunil.M M. Kumar.S (6)	Enhancing Emergency Care Through Machine Learning-Based Admission Prioritization	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	Hyderabad, India	05-05-2026	Internalti onal	979-8-3315-8997-4	10.1109/ICoECIT68303.2026.11497149	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11497149	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Enhancing+Emergency+Care+Through+Machine+Learning-Based+Admission+Prioritization&btnG=	NA
17	**C. V. L. Narayana** M. Harshitha A. Ameen P. Chaitanya S. M. Touseef S. M. Farsheed (6)	An Intelligent Multimodal LSTM Framework for Enhancing Campus Shuttle Arrival Accuracy	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	Hyderabad, India	05-05-2026	Internalti onal	979-8-3315-8997-4	10.1109/ICoECIT68303.2026.11496848	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11496848	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=An+Intelligent+Multimodal+LSTM+Framework+for+Enhancing+Campus+Shuttle+Arrival+Accuracy&btnG=	NA
18	**S. Firoz Begum** M. Praveen Kumar S. Vishnu Vardhan P. Visweswar Reddy B. Nityananda Reddy N. Santhosh Reddy (6)	Multimodel Video Summarization and Neural Machine Translation Framework for Indian Regional Languages	Conference	2026 International Conference on Smart Futuristic Technology	Bengalore, India	12-05-2026	Internalti onal	979-8-3503-5707-3	10.1109/ICSFT66733.2026.11506821	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/document/11506821	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Multimodel+Video+Summarization+and+Neural+Machine+Translation+Framework+for+Indian+Regional+Languages&btnG=	NA

19	S. Regha` Praveen Sivathapandi **Pujari Hari Krishna** Gaurav Kumar Pranjali J. Patil (5)	Blockchain–AI–IoT Enabled Framework for Intrusion Detection and Interactive Cloud Security Monitoring	Conference	2026 6th International Conference on Trends in Material Science and Inventive Materials (ICTMIM)	Kanyakumari, India	13/05/2026	Internaltional	979-8-3315-7006-4	10.1109/ICTMIM68190.2026.11508109	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11508109	https://scholar.google.com/scholar?q=Blockchain-AI-IOT+Enabled+Framework+for+Intrusion+Detection+and+Interactive+Cloud+Security+Monitoring&hl=en&as_sdt=0,5	NA
20	**T.Hari Krishna** Chandrika B Jaswanth.G Deepika.J Shiva Pavan Kumar.G Keerthana.Y (6)	Deep Learning-Based Detection of Specific Vitamin Deficiencies with Integrated Preventive and Nutritional Guidance	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	Hyderabad, India	05/05/2026	Internaltional	979-8-3315-8997-4	10.1109/ICoECIT68303.2026.11496943	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11496943	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Deep+Learning-Based+Detection+of+Specific+Vitamin+Deficiencies+with+Integrated+Preventive+and+Nutritional+Guidance&btnG=	NA
21	Matam Shashidhar **T. Harikrishna (2)**	Brain Tumor Detection and Classification in Medical Imaging: Comprehensive Survey and Primary Ensemble Model	Conference	2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)	Hyderabad, India	05/05/2026	Internaltional	979-8-3315-8997-4	10.1109/ICoECIT68303.2026.11498013	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/abstract/document/11498013	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Brain+Tumor+Detection+and+Classification+in+Medical+Imaging%3A+Comprehensive+Survey+and+Primary+Ensemble+Model&btnG=	NA

22	**N. Penchalaiah** E. Sayyed (2)	Computational Approaches for Brain Tumor Detection and Classification in MRI: A Review of Machine Learning and Deep Learning Models	Conference	2026 1st International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETAACT)	Bhubaneswar, India	03/06/2026	Internaltional	979-8-3315-4949-7	10.1109/ETAACT69135.2026.11541444	Scopus and Google Scholar	NA	https://ieeexplore.ieee.org/document/11541444	NA	NA
23	**Narasapuram P.** Sangaraju G. Yerramreddy H. Kaditham S. Katika S (5)	Skin Condition Recognition Through Deep Learning: A RESNET50 Implementation	Conference	Proceedings of the 1st International Conference on Intelligent Methods and Advanced Computer Scientific Innovations	Aditya Degree and P.G. College(A)	23 & 24th, June 2025	International	978-989-758-787-0	10.5220/0014191300004932	NIL	NIL	NIL	NIL	NA
24	**Penchalaiah Narasapuram** Koteswara Reddy Juturu Karimulla Shaik Mabu Subahan Pulimaddi Srinath Vallepu (5)	IOT Enabled Smart Care System for Automated Leaf Detection and Health Diagnosis	Conference	Proceedings of the 1st International Conference on Intelligent Methods and Advanced Computer Scientific Innovations	Aditya Degree and P.G. College(A)	23 & 24th, June 2025	International	978-989-758-787-0	10.5220/0014191300004932	NIL	NIL	NIL	NIL	NA
25	**Dr.N.Penchalaiah** Gala Mahathi Veluru Keerthi Gurramkonda Naresh Nidimamidi Mohammad Irfan Abbu Ganesh (6)	Real-Time Drowsiness Detection for Driver Safety Using MobileNet-LSTM Architecture	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence, Kolkata	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA

26	**Dr.N.Penchalaiah** T.Charith Reddy S.Abdul Afridee K.Anil Kumar B.Bhanukiran Reddy C.Kartheek (6)	Park-Smart: IoT-Driven Parking Slot Locator	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence, Kolkata	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA
27	**Dr.N.Penchalaiah** P.Deepa B.Mallikarjuna N.Chandrika K.Jayanth G.Karthik (6)	A next generation smart forest fire detection using iot and machine learning	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA
28	**Dr.N.Penchalaiah** N.Haritha B.Narendra S.Abu Bakar Siddik K.Shaheer Baba G.Lahari (6)	Automated Sign Language Recognition and Speech Generation Using Spatiotiotemporal Feature Extraction	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA
29	**Dr.N.Penchalaiah** Challa Vyshnavi Bhupalam Vishnu Varshith Cheethirala Supriya Oleti Raghu Sai Varun (5)	CardioDiagnose: A Custom Machine Learning Model for Real-Time Cardiac Risk Diagnosis Using CatBoost, LightGBM, and Deep Learning	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA

30	**N. Penchalaiah,** C.Venkatesh, B. Vahida Rahiman Bhanu, K. Venkateswara Raju, P. Chandra Reddy, J.Chinna Babu (6)	Advancing Skin Condition Diagnosis: A Deep Learning Shift from ResNet50 to VGG19	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA
31	**N. Penchalaiah,** J.Chinna Babu,C. Srinivasulu , K. Venkateswara Raju, P. Chandra Reddy, C.Venkatesh (6)	Smart Plant Care: An IoT-Enabled Expert System for Automated Plant Leaf Detection and Health Management	Conference	International conference of REMINISCENT Research on Artificial Intelligence (ICRRAI - 2025)	IIT Mandi, Catalyst Convence	27th Sepetember 2025	International	978-9819677597	Under Process	NA	NA	NA	NA	NA
32	Sandhya Rani **Dr.T.Harikrishna** Nalla Veerraju Mangamma Dharavatu (4)	Evaluating the Resilence of Hybrid Quntum AI FrameWorks Under Computational and Scalability Constraints	Conference	Proceedings of the 9th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC-2025)	Hindustan Institure Of Technology, Coimbatore	10-12 September 2025	International	979-8-3315-5502-3	Under Process	NA	NA	NA	NA	NA
33	**N. Siva** C. Sowmya K. Rajasekhar U. Usharani K. Dinesh Reddy S. Gurusekhar (6)	Deceptive Web Attacks Detection: A Machine Learnign - Driven Defence Framework	Conference	Internation Conference on Computational and Cognitive Systems Science (ICCCSS'25)	Rathinam Technical Campus	30 - 31 October, 2025	International	NA	Under Process	NA	NA	NA	NA	NA

34	**Dr. Swarna Surekha** B Dinesh M Bharath Kumar T Mohan M Chandu T Sanakara (6)	AI-POWERED CROP DISEASE DETECTION AND ANALYSIS USING MACHINE AND DEEP LEARNING	Conference	Internation Conference on Computational and Cognitive Systems Science (ICCCSS'25)	Rathinam Technical Campus	30 - 31 October 2025	International	NA	Under Process	NA	NA	NA	NA	NA
35	**Pemma Radhika**	GENETIC FEATURE EMBEDDINGNETWORKS FOR NUTRIENT-RICH CROP DESIGN	Conference	International conference onComputational and Cognitive System Science (ICCCSS'25)	Rathinam Technical Campus, Combatore-Tamil Nadu	30th-31st october 2025	International	978-989-758-824-2	10.5220/0014941900005024	NA	NA	NA	NA	NA
36	**P. Hari Krishna**	AI-Driven Intraoral Imaging for Automated Dental Diseases Diagnosis	Conference	International Conference on Computational and Cognitive Systems Science (ICCCSS'25)	Rathinam Campus, Coimbatore, Tamil Nadu.	30th-31st October 2025	International	NA	Under Process	NA	NA	NA	NA	NA
37	**K. Reddemma** B. Vamsi Krishna S. Puneeth S. Narasakka N. Sai Jaswanth T. Sneha Latha (6)	High-Precision Plant Disease Classification using Novel segmentation and Deep Learning	Conference	International Conference on Interdisciplinary Research in Science, Engineering and Technology (ICIRSET-2025)	Shah & Anchor Kutchhi Engineering College , Mumbai in Association with NTL Technologies	1-2 November 2025	International	NA	Under Process	NA	NA	NA	NA	NA

38	**K. Reddemma** H. Affrin B. Likhitha P. Lahari K. Madhushraddha Reddy R. Jithendra Reddy (6)	Explainable AI-Powred Federated Learning Model for Financial Fraud Detection: Safe and Open banking	Conference	International Conference on Interdisciplinary Research in Science, Engineering and Technology (ICIRSET-2025)	Shah & Anchor Kutchhi Engineering College , Mumbai in Association with NTL Technologies	1-2 November 2025	International	NA	Under Process	NA	NA	NA	NA	NA
39	**N. Siva** K. Shakeeb Ahamad P. Nikitha L. Shiva Prasad Reddy A. Pallavi N. Navyalakshmi Thulasi (6)	An Optimized Hybrid Model for Diabetic Retinopathi Classification Using Retinal Inages	Conference	International Conference on Interdisciplinary Research in Science, Engineering and Technology (ICIRSET-2025)	Shah & Anchor Kutchhi Engineering College , Mumbai in Association with NTL Technologies	1-2 November 2025	International	NA	Under Process	NA	NA	NA	NA	NA
40	**N. Siva** K. Durgadevi J. Naga Jyothi D. Dadakhalandar K. Guruteja M. Keerthan Reddy (6)	A Machine Learning Framework for Detecting Fraudulent Transaction in UPI System	Conference	International Conference on Interdisciplinary Research in Science, Engineering and Technology (ICIRSET-2025)	Shah & Anchor Kutchhi Engineering College , Mumbai in Association with NTL Technologies	1-2 November 2025	International	NA	Under Process	NA	NA	NA	NA	NA
41	**C. Meghana**	Explainable AI for Crop Recommendation and Yield Forecasting	Conference	International Conference on Interdisciplinary Research in Science, Engineering, and Technology (ICIRSET-2025)	Shah & Anchor Kutchhi Engineering College, Mumbai in association with NTL Technology, Tamil Nadu.	1 - 2nd November, 2025	International	NA	Under Process	NA	NA	NA	NA	NA

42	**shaik Sumayya**	pyramid vision transformer and context-aware for accurate and explainable Bean leaf disease classification	Conference	International conference on interdisciplinary research in science, Engineering and technology (ICIRSET-2025)	shah and anchor kutchi engineering college, Mumbai	1-2-november-2025	International	NA	Under Process	NA	NA	NA	NA	NA
43	**Swarna Surekha**	Blockchain-Enabled Digital Credentialing : An Interoperable Hybrid Architecture for Academic Integrity and Verification	Conference	International Conference on Emerging Engineering Technologies and Applications (IC-EETA'25)	MEDICAPS University, Malaysia	6-8 November 2025	International	NA	Under Process	NA	NA	NA	NA	NA
44	**C.V. Lakshmi Narayana**	Food Freshness Detection and Classification Using Deep Learning and Convolutional Neural Networks	Conference	ICDSMLA-2025	ANNAMACHARYA UNIVERSITY, Rajampet	23-24 Dec 2025	International	NA	Under Process	NA	NA	NA	NA	NA
45	**Dr.N. Penchalaiah**	IoT-Based Smart Traffic System for Accident Detection and Prevention	Conference	7th International Conference on Data Science, Machine Learning & Applications (ICDSMLA–2025)	ANNAMACHARYA UNIVERSITY, Rajampet	24-Dec-25	International	NA	Under Process	NA	NA	NA	NA	NA

46	**Dr. Swarna Surekha**	AUTOMATED BRAIN TUMOR DETECTION AND CLASSIFICATION FROM MRI SCANS USING DEEP LEARNING	Conference	2026 International Conference on Smart Futuristic Technology (ICSFT)	IEEE Banglore Section	2-3 January 2026	International	NA	Under Process	NA	NA	NA	NA	NA
47	**Dr. Swarna Surekha**	LEVERAGING FEATURE SELECTION AND DEEP LEARNING FOR ROBUST PHISHING WEBSITE CLASSIFICATION	Conference	2026 International Conference on Smart Futuristic Technology (ICSFT)	IEEE Banglore Section	2-3 January 2026	International	NA	Under Process	NA	NA	NA	NA	NA
48	**Dr J Krishna** B Vishnu Vardhan Reddy B Sreedhar Reddy M Reddaiah M Raghu (5)	Layoff rate forecasting using supervised machine learning models	Conference	2026 16th International Conference on Cloud Computing, Data Science & Engineering	Noida, Uttar Pradesh	4-6 February. 2026	International	NA	Under Process	NA	NA	NA	NA	NA
49	**shaik sumayya**	Automated helmet and plate number detection using deep learning	Conference	2026 IEEE national conference on emerging trends in engineering and management	Annamacharya institute of technology and sciences, kadapa	11-02-2026	National	NA	Under Process	NA	NA	NA	NA	NA

50	Kiranmayee, B **Krishna, J** Sowmyasree, V Anusha, M Alekhya, G Shashikala, S (6)	Adversarial Machine Learning for Cyber Threat Detection and Defense in Modern Networks	Conference	International Conference on Signal Processing and Artificial Intelligence (ICSPA 2026)	Tagore Institute Of Engineering and Technology, Deviyakurichi , Salem	28-03-2026	International	NA	Under Process	NA	NA	NA	NA	NA
51	**Dr.N. Penchalaiah** Kancharla K Chaitanya (2)	Recent Advances in Automated Lung Cancer Diagnosis in CT Imaging: A Comprehensive Survey of ML and DL Techniques	Conference	6th International Conference on Pervasive Computing and Social Networking (ICPCSN-2026)	R P Shastry Institute of Technology, Salem, Tamil Nadu, India	06-08 May 2026	International	979-8-3315-7235-8	Under Process	NA	NA	NA	NA	NA
52	**Lakshmi Narayana C.V.** Vamsi, Viswanadham Racharla, Varun Sandhya, Narapureddy Uma Sankar, Jangiti Sravani, Galisetty **(6) - AI& ML**	Road and Pothole Segmentation Using an Attention-Based Coupled Framework	Book Chapter	Cyber-Physical Systems	CBIT, Hyderbad	18-Nov-25	Internatior	978-177964342-1	10.1201/9781779643421-8	Scopus & Google Scholar	NA	https://www.scopus.com/pages/publications/105023351507?origin=resultslist	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Road+and+Pothole+Segmentation+Using+an+Attention-Based+Coupled+Framework&btnG=	**8**
53	**Dr N Penchalaiah** G Lahari N Haritha B Narendra S Abu Bakar Siddik K Shaheer Baba (6)	AN END-TO-END HYBRID SPATIOTEMPORAL DEEP LEARNING FRAMEWORK FOR REAL-TIME SIGN LANGUAGE TO SPEECH TRANSLATION	Book Chapter	Next-Generation Cloud Databases: Intelligent Storage and Distributed Computing V6S1003B3	Chikkamagaluru, Karnataka	Jun-26	International	978-81-69809-23-8	NA	NA	NA	NA	NA	4 (1)

54	**N.Penchalaiah** Abbu Ganesh Gala Mahathi Veluru Keerthi Gurramkonda Naresh Nidimamidi Mohammad Irfan (6)	AI-BASED DRIVER DROWSINESS MONITORING SYSTEM FOR ROAD SAFETY	Book Chapter	Next-Generation Cloud Databases: Intelligent Storage and Distributed Computing V6S1003B4	Chikkamagaluru, Karnataka	Jun-26	International	978-81-69809-23-8	NA	NA	NA	NA	NA	3 (1)
55	**N.Penchalaiah,** Githa Karthik, Puthuru Deepa, Bandi Mallikarjuna, Neeli Chandrika, Kanuma Jayanth (6)	SMART WILDFIRE DETECTION USING IOT AND MACHINE LEARNING	Book Chapter	Next-Generation Cloud Databases: Intelligent Storage and Distributed Computing V6S1003B5	Chikkamagaluru, Karnataka	Jun-26	International	978-81-69809-23-8	NA	NA	NA	NA	NA	2 (1)
56	**Dr. N. Penchalaiah,** Cholemarri Kartheek, Takkoli Charith Reddy, Shaik Abdul Afridee, Kappala Anil Kumar, Banala Bhanukiran Reddy (6)	URBANPARK: INTELLIGENT PARKING ALLOCATION WITH ANPR	Book Chapter	Next-Generation Cloud Databases: Intelligent Storage and Distributed Computing V6S1003B6	Chikkamagaluru, Karnataka	Jun-26	International	978-81-69809-23-8	NA	NA	NA	NA	NA	1 (1)

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Department of Humanities and Sciences

2. Details of Conference Proceddings published with ISSN From 01.07.2025 to 30.06.2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume& Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/ International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	**Rajababu Chintaparty**, Tiju Thomas, Bandameeda Devendra, Sreenivasa Kumar Godlaveeti, GuruSampath Kumar Ankisetty	H&S (Physics)	Alkali-controlled γ-Al2O3 nanostructures with high dielectric constant	International conference on Advances in Light-Matter Interactions: Fundamentals to Frontiers	GITAM Deemed To Be University-Bengaluru Campus	04-02-2026 to 06-02-2026	Bengaluru	Not assigned	Not yet	15-04-2026	International	2348-1269	WOS ,SCOPUS & Google scholar	https://doi.org/10.1016/j.ceramint.2026.04.198	Not yet INDEXED	https://www.scopus.com/pages/publications/105036239052?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=rbjAs0sAAAAJ&sortby=pubdate&citation_for_view=rbjAs0sAAAAJ:dQ2og3OwTAUC

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DEPARTMENT OF H&S

3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From 01-07-2025 to 30-06-2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	B.Sowjanya Swapna Priya	Blooming English Language Skills for Budding Engineers to flourish in Global Environment	Proceedings of conference	Changing Landscape of Literature from Ancient to Digital Age	Holy Cross College(Autonomous) Nagercoil Kanyakumari	11-07-2025 to 12-07-2025	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
2	M. Lakshmi Narasimha	Beyond Boundaries: The Tides of Love and Liberation in 'Chemmeen' and Breaking Ties'.	Proceedings of conference	International Conference on Innovations in Agriculture, Design, Business, Society, Languages and Literature 2025	Vellore Institute of Technology, Vellore, Tamilnadu.	30-10-2025 to 31-10-2025	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
3	P. CHANDRA REDDY	A NUMERICAL STUDY ON THE EFFECTS OF HALL CURRENT AND VISCOUS DISSIPATION ON UNSTEADY MHD FREE CONVECTION FLOW PAST AN INCLINED POROUS PLATE BY FDM AND RSM	Proceedings of conference	6th International Conference on Recent Trends in Applied and Computational Mathematics	REVA University, Bangalore	09.10.2025 to 10.10.2025	International	978-93-344-4942-6	N.A	N.A	N.A	N.A	N.A	N.A
4	Dr. M. Parvathi	Heat and Mass transfer characteristics of MHD hybrid nanofluid flow through a porous medium over a stretching sheet with Radiation and Chemical Reaction	Proceedings of conference	National Conference on Mathematics and Engineering Applications-2025	Sri Venkateswara University, Tirupati	22/12/2025-24/12/2025	Nationa	N.A	N.A	N.A	N.A	N.A	N.A	N.A
5	Dr. P. Roja	Thermal Radiation Effects on Magnetohydrodynamics Flow of a Micropolar Maxwell Nanofluid over an exponentially stretching surface with slip conditions.	Proceedings of conference	National Conference on Mathematics and Engineering applications-2025	S. V. University, Tirupati.	22-12-2025 to 24-12-2025	Nationa	N.A	N.A	N.A	N.A	N.A	N.A	N.A
6	N.Veera Mohan Reddy	Mathematics and Engineering Applications-2025	Proceedings of conference	Mathematics and Engineering Applications-2025	Sri Venkateswara University, Tirupati	22/12/2025 to 24/12/2025	Nationa	N.A	N.A	N.A	N.A	N.A	N.A	N.A
7	B.Vahida Rahiman Bhanu	Hybrid Nanofluid Flow Past Porous Medium with Inclined Angle and Ramped Temperature	Proceedings of conference	National Conference on Mathematics and Engineering Application -2025	S.V.University, Tirupati	22-12-2025 to 24-12-2025	Nationa	N.A	N.A	N.A	N.A	N.A	N.A	N.A
8	M. Parvathi	Magnetohydrodynamic flow of heat and mass transfer on unsteady hybrid nanofluid over a stretching sheet.	Proceedings of conference	INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN COMPUTATIONAL SCIENCES AND ENGINEERING	JB Insitute of Engineering and Technology, Hyderabad	15-12-2025 TO 20.12.2025	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
9	P. Suneetha Naidu, Dr. M. Praveena	acquisition of prompting skills in creative and effective use of AI Assisted communication A diagnostic study	Proceedings of conference	International conference on contemporary researches in english, Engineering, Science, Management & Arts	National Foundation for Enterpreneurship development,Coimbatore, Tamil nadu	29-2-2026 to 31-2-2026	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
10	a. vimala	Sustainable Development Through Science, Engineering & Technology: A Viksit Bharat Perspective (SDSET-202).	Proceedings of conference	Two Day National Conference	Maulana Azad National Urdu University, KADAPA	12th and 13th February 2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
11	JAGATHAPI PRASAD RAJU	Polymers	Proceedings of conference	Spark RX	ANNAMACHARYA COLLEGE OF PHARMACY, RAJAMPET	21-02-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
12	PRASAD RAJU JAGATHAPI	Modern Trends in chemical sciences	Proceedings of conference	Modern Trends in chemical sciences (MTCS)-2026	IIT Tirupati, Andhra pradesh	5-03-2026 to 06-03-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
13	PASALA VIMALA	Strategic methods in effective communication	Proceedings of conference	Communication on the Era of digitalization	Sir parashurambhau college	10 th and 11th March,2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
14	Marella Lakshmi Narasimha	"Communication in the Era of Digitalisation"	Proceedings of conference	A Two-Day National Conference on "Communication in the Era of Digitalisation"	Sir Parashurambhau College (Empowered Automomus) Pune	1O and 11 March, 2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
15	Hari Chandana.N	Digital Communication in Education:Exploring teacher-student interaction in the hybrid and virtual learning environments.	Proceedings of conference	Communication in the Era of Digitalisation	Sir Parashurambhau College(Empowered Autonomous)	10-03-2026 to 11-03-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A

16	S Sakkumma	The Role of Artificial Intelligence in Enhancing Effective Communication in the Digital Age	Proceedings of conference	A Two - Day International Conference	Sri Paradshurambhau College(Empowered Autonomous) Pune - 30	10-03-2026 to 11-03-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
17	G V NARMATHA	Communication in the Era of Digitalization: Critical study on select novels of Chetan Bhagat	Proceedings of conference	Communication in the Era of Digitalization	Sir Parashurambhau College (Empowered Autonomous), Pune	10 & 11 March 2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
18	M Lakshmi Narasimha	Pronunciation Pedagogy, Integrating Phonetic Theory, Digital Tools and Intelligibility Goals.	Proceedings of conference	A Two-Day National Conference on "Communication in the Era of Digitalisation"	Sir Parashurambhau College (Empowered Automomus)	10-03-2026 to 11-03-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19	PASALA VIMALA	ENVIRONMENTAL POLLUTION	Proceedings of conference	Green Innovation for Sustainable Development	Dalit Mitra Kadam Guruji Vidnyan Mahavidyalaya,Magalwedha, Maharastra	15-05-2026 to 16-05-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
20	L Hari Krishna	MHD Influence on Peristaltic Flow of a Bingham Fluid through an Inclined Channel under Long-Wavelength Approximation	Proceedings of conference	International Conference on Applications of Mathematics in Modern Science and Technology (ICAMST-2026)	Department of Mathematics, Anurag University, Hyderabad	20.02.2026 to 21.02.2026	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
21	Praveena M	Communication Etiquette in Digital Era	Proceedings of conference	National Conference on CommunicatiCommunication Etiquette in Digital Era in the Era of Digitalisation	Sir Parashurambhua College	10-11 March 2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
22	Manneru Haritha	Long-Term Corrosion Degradation of Reinforced Recycled Aggregate Concrete under Stimulated Acid Rain Exposure	Proceedings of conference	Sustainable Materils Science, Strunctures & Manufacturing(ICSMSM-2026)	SRI VENKATESWARA COLLEGE OF ENGINEERING & TECHNOLOGY, Chittoor Andhra Pradesh	23-04-2026 TO 24-04-2026	National	ISBN:978-81-980538-3-1	N.A	N.A	N.A	N.A	N.A	N.A
23	Vasanthi Jangala Naga; Hemasree Koganti; Karthikeyan R; **Harinath Babu S**; Balaji S; Sangeetha S	Domain-Specific AI with foundation system for general LLMs to industry intelligence	Proceedings of conference	International Conference on Connected Intelligence for Industrial Applications (CI2A-2026)	Department of Computer Science and Engineering, Akal University	03-04-2026 to 05-04-2026	International	979-833158457-3	https://10.1109/CI2A69097.2026.11577077	Scopus & Google scholar	N.A	https://www.scopus.com/pages/publications/105045200000?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=apXXl8AAAAAJ&sortby=pubdate&citation_for_view=apXXl8AAAAAJ:KxtntwgDAa4C	N.A
24	L Hari Krishna	Hybrid Numerical–Machine Learning Approach for Analyzing Hall Current and Mass Transfer Effects on Free Convection of Stratified Viscous Fluids	Proceedings of conference	7th International Conference on Data Science, Machine Learning and Applications	Department of ECE, Annamacharya University, Rajampet	23-12-2025 to 24-12-2025	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
25	L Hari Krishna	AI-Augmented Analysis of Magneto hydrodynamic Forced Convection Flow in a Horizontal Porous Chan-nel with Anisotropic Permeability Effects	Proceedings of conference	7th International Conference on Data Science, Machine Learning and Applications	Department of ECE, Annamacharya University, Rajampet	23-12-2025 to 24-12-2025	International	N.A	N.A	N.A	N.A	N.A	N.A	N.A
26	BILLA JAHEER	COMMUNICATION IN DIGITAL ERA	Proceedings of conference	communication in the era of digitalization	Sir Prasharambhau college, Pune	10-03-2026-11-03-2026	National	N.A	N.A	N.A	N.A	N.A	N.A	N.A
27	P. CHANDRA REDDY	Intelligent Shopping Carts: IoT Innovation For Supermarkets	Proceedings of conference	2nd International Conference on Recent Trends in Electrical, Electronics and Computing Technologies (ICRTEECT)	IEEE, WARANGAL, INDIA		International	979-8-3315-8172-5	N.A	N.A	N.A	N.A	N.A	N.A
28	**I.Pugazhenthi**, S. Mohammed Safiullah & K. Anver Basha	Nanofillers in the Thermal and Optical Properties of Functional Polymers: Synergistic Effects	Book Chapter	N.A	N.A	06-08-2025	International	978-981-96-2407-2	https://link.springer.com/rwe/10.1007/978-981-96-2407-2_28	SCOPUS & GOOGLE SCHOLAR	N.A	https://www.scopus.com/pages/feedback/author/review-profile?authorIds=55791934200	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=uZMtH8oAAAAJ&sortby=pubdate&citation_for_view=uZMtH8oAAAAJ:ns9cj8rnVeAC	28
29	**B.Jaheer - H&S**	English Language Teaching: The Role of Connected Learning , Intitative, in Bridging Educational Gaps Through digital Innovation	Book Chapter	N.A	N.A	24-12-2025	International	978-9334459845	https://www.amazon.in/s?k=blended+learning+in+AI+and+ELT+by+Mr.+Tripuraneni+Sujith&crid=214WK24A53RLD&sprefix=blended+learning+in+ai+and+elt+by+mr.+tripuraneni+sujith%2Caps%2C395&ref=nb_sb_n	N.A	N.A	N.A	N.A	12
30	**M. Praveena - H&S**	Desired Role of Humanities in Safegaurding one's Eye Health	Book Chapter	N.A	N.A	07-2025	National/International	978-93-6976-708-3	https://jecpublication.com/index.php/product/emerging-trajectories-in-literature-and-language-research/	N.A	N.A	N.A	N.A	5
31	**Ilangovan Pugazhenthi**, Vishnu Kirthi Arivarasan	Alginate-Based Composites in Additive Manufacturing	Book Chapter	N.A	N.A	01-05-2026	International	9781394333370	https://onlinelibrary.wiley.com/doi/abs/10.1002/9781394333400.ch11	SCOPUS & GOOGLE SCHOLAR	Yet to be updated	N.A	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=uZMtH8oAAAAJ&sortby=pubdate&citation_for_view=	N.A
32	**Pugazhenthi Ilangovan**	Advances in sustainable nonmetallic biomaterials	Book Chapter	N.A	N.A	2026	International	9780443415784	https://doi.org/10.1016/B978-0-443-41578-4.00022-5	SCOPUS & GOOGLE SCHOLAR	Yet to be updated	N.A	NA	9

33	Rakesh Podaralla; Muthireddy P; B. Bhasker; **V.Vishnuvardhan**; N Ramesh Babu	AI - Based Resume Analysis and Career Recommendation System for Empowering Students	Proceedings of conference	4th International Conference on Knowledge Engineering and Communication Systems (ICKECS)	Sri Jagadguru Chandrashekaranatha Swamiji Institute of Technology (SJCIT)CHICKABALLAPURA, India	24-25 April 2026	International	979-8-3315-4777-6	https://doi.org/10.1109/ICKECS70176.2026.11527995	SCOPUS & GOOGLE SCHOLAR	N.A	Yet to be updated	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=nmRZ7NcAAAAJ&citation_for_view=nmRZ7NcAAAAJ:YsMSGLbcyi4C	NA
34	Dhanunjaya Rao Kodali; Karthi P; Vivekanandan S; **M. Uma Maheswar;** Satish Kumar Nadimpalli; Prabagar. S	Cloud-Based Hybrid AI Framework for Automated Grading and Adaptive Assessment in Higher Education	Proceedings of conference	IEEE International Conference on Emerging Trends in Computing and Communication	Mangalore, India	28-29 November 2025	International	979-8-3315-8508-2	https://doi.org/10.1109/ETCOM66606.2025.11436178	Scopus	N.A	https://www.scopus.com/pages/publications/105037319263?origin=resultslist	N.A	N.A

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, RAJAMPET/ ANNAMACHARYA UNIVERSITY, RAJAMPET

Department of MBA

(b.MBA) 2. Details of Conference Proceddings published with ISSN From 01/07/2025 to 30/06/2026

S. No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume& Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/International	ISSN /ISBN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
1	**Dr.T.Navaneetha** R. Saravanakumar Dr.A.Vini Infanta Marwan Aziz Mohammed Dr. Vinisha Sumra Mariam Fadel Ali (6)	MBA	Behavioral Analytics in E-Learning: Deep Learning for Real-Time Interaction and Performance Prediction	12th International Conference on Emerging Trends in Engineering & Technology - Signal and Information Processing (ICETET - SIP)	GH Raisoni College of Engineering	01-08-2025	Nagpur	NA	01-06	09-2025	International	2157-0485	Scopus	10.1109/ICETETSIP64213.2025.11156864	NA	https://www.scopus.com/pages/publications/105017420190?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=7_xAt58AAAAJ&citation_for_view=7_xAt58AAAAJ:4DMP91E08xMC
2	Dr. G.Ramanjaneyulu, Somasekhar Donthu, B.Venkata Lakshmi, **V. Mouneswari,** Y.Mallikarjuna Achari & S.Md. Ershad **(6)**	MBA	HR Analytics in Predicting Employee Turnover in IT Industry: A Structural Equation Modeling Approach	International Conference on Sustainable Business: People, Planet and Profit-ICSB 2025	Institute of Management and Information Technology, Cuttack And College of IT and Management Education, Bhubaneswar	09-02-2026	Cuttack	NA	NA	06-2026	International	3059-3344	https://link.springer.com/chapter/10.1007/978-3-032-11296-5_19	NA	NA	NA	NA

Hubballi, Karnataka, India. June 19 - 21, 2026

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HEAD OF THE DEPARTMENT

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DEPARTMENT OF MBA

(C-MBA)3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From 01-03-2026 to 08-06-2026

S.No.	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	Dr. G. ARUNA GUDIMENTLA (1) Dr. C. VINDYA VASINI (2) Dr. M. KRISHNA NAIDU (3) **Dr. G. KANUKA RAJU (4)** Dr. A.K. NEERAJA RANI (5) PURNACHANDRA RAO SUDA (6)	AI-Driven Digital Transformation in Treasury Operations: Cloud Computing and Real Time Predictive Analytics for Liquidity Management	Conference Proceedings	Proceedings of the 6th International Conference on Trends in Material Science and Inventive Materials (ICTMIM-2026)	ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY, KANYAKUMARI, TAMILNADU	08/04/2026 to -10/04/202	INTERNATIONAL	979-8-3315-7005-7	10.1109/ICTMIM68190.2026.11506816	IEEE	https://ieeexplore.ieee.org/document/11506816/	https://ieeexplore.ieee.org/document/11506816	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=AI-Driven+Digital+Transformation+in+Treasury+Operations%3A+Cloud+	7
2	**Mr. K. Venkata Subbaiah (1)** Kathari Santosh (2) Timur Kholmukhmamedov (3) Dr. Shabna Babu (4) Dr. Syed Hussian Imam Gardezi (5) Dr.S. Muthuperumal (6)	Adoption and Effectiveness of Agile Practices in Large Scale Engineering Projects in Emerging Economies	Conference Proceedings	2026 World Conference on Computational Science and Technology (WcCST)	Chandigrh University	26/03/2026 to -27/03/2026	International	979-8-3315-9967-6	DOI: 10.1109/WcCST67302.2026.11495837	IEEE	http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=11495837	https://ieeexplore	NA	6
3	**Dr. C. Uma Devi,** Dr. V. Mouneswari, Dr. P. Saritha	Digital transformation and innovation as strategic drivers for sustainable competitive advantage: Evidence from manufacturing SMEs	Book chapter	2nd International conference on sustainable business 2026 (ICSB2026)	Institute of management and information technology, Cuttack and College of IT and management education, Bhubaneswar	30/03/2026 to -31/03/2026	International	978-93-47140-49-5	10.1201/9781042001767	IEEE	https://icsb.imit.ac.in/	NA	NA	5

4	Somasundaram M **Dr. G. Kanuka Raju (2)**	AI based Mutual Fund Investment Behavior: Exploring Awareness, Risk Tolerance, and Socio-Economic Influences	Conference Proceedings and book chapter	1st International Conference on Smart Systems for Sustainable Development using Advanced Computational Techniques (ICSSA – 2025)	Kuppam Engineering College	10/10/2025 11/10/ 2025	Kuppam	978-1-042-00176-7	10.1201/9781042001767-48	IEEE	https://icssa2025.kec.ac.in/	978-1041362692	Scopus	48
5	K Subba Reddy	Fraudulent Credit Card Transaction Detection Using a Hybrid Ensemble–Anomaly Detection Framework	Conference Proceedings	2026 6th International Conference on Intelligent Technologies (CONIT)	KLE institute of technology , Hubli, Karnataka	19/06/2026 to 2/06/2026	Hubli, karnataka	979-8-3195-1858-3	https://ieeexplore.ieee.org/servlet/opac?	IEEE	https://ieeexplore.ieee.org/document/11620759	979-8-3195-1858-3	IEEE	3
6	**B.Swathi**	Self-Learning Evolutionary Control Networks for Adaptive Energy Optimization in Smart IoTs Cyber- Physical Systems	Conference Proceedings	2026 sixth International Conference on Advances in Electrical,computing,communications and sustainable Technologies(ICAECT)	Shri shankarachary a technical Campus, Bhilai, Chattishgarh, India.	8 /01/2026 ; 09/01/2026	Chattishgarh	NA	NA	IEEE	International	979-8-3315-7322-5	scopus	5

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Department of COMPUTER APPLICATIONS

(b.MCA) 2. Details of Conference Proceddings published with ISSN From 01-JULY-2025 to 30-JUN-2026

S.No	Name of the Author(s)	Department of the Author(s)	Title of the paper	Name of the Conference	Organizer Name	Date of the Event (DD-MM-YYYY)	Place	Volume & Issue	Page Numbers (Ex: 102-110)	Month and Year of Publication (MM-YYYY)	National/ International	ISSN	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	Proceedings URL (DOI)	WoS URL of the Article	SCOPUS URL of the Article	Google Scholar URL of the Article
NIL																	

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DEPARTMENT OF COMPUTER APPLICATIONS

(c.MCA) 3. Details of Papers Presented/ published in Proceedings of the Conference/ Book Chapter with ISBN. From 01-JULY-2025 to 30-JUN-2026

S.NO	Name of the Authors	Title of the Paper	Whether Proceedings of the Conference/ Book Chapter	Name of the Conference/ Book Chapter	Oraganizer's Name and Place	Date of Conference/ publication (DD/MM/YYYY)	National/International	ISBN No.	Paper URL (DOI)	WoS/SCPUS/ Google Scholar (If in all or both sometimes mention and eg. WoS & SCOPUS)	WoS URL of the Paper	SCOPUS URL of the Paper	Google Scholar URL of the Paper	Chapter Number
1	Uma Mahesh Boda, **Mallikharjuna Rao Nuka**	A Contemporary Survey on ML-Based Data Gathering with Mobile Sink in WSNs	–	2025 OITS International Conference on Information Technology (OCIT)	Bhubaneswar, India	02-Mar-26	International	979-8-3315-7702-5	10.1109/OCIT66168.2025.11400479	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105036690980?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=G7AZhT0AAAAJ&sortby=pubdate&citation_for_vi	–
2	M Sai Yaswanth, Srinivasarao Chilakala, Dr. **C. Madana Kumar Reddy,** K. Nageswararao, G. Jeevana Manikanta, Padma Vijetha	CAPRI-DP: A Differentially Private Extension to Context-Aware Multi-Agent Privacy Frameworks	–	5th International Conference on Communication, Computing and Electronics Systems (ICCCES-2026)	PPG Institute of Technology, Coimbatore, Tamil Nadu, India	25-Mar-26	International	979-8-3315-5621-1	10.1109/ICCCES62661.2026.11437027	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105037468035?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=8myQgJoAAAAJ&sortby=pubdate&citation_for_view=8myQgJoAAA	–
3	Modadugu Sai Yaswanth **Dr. C. Madana Kumar Reddy**	Unresolved Challenges and Future Directions in AI-based Skin Cancer Detection: A Review of Data Diversity, Model Interpretability, and Clinical Integration	–	9th International Conference on Electronics, Communication and Aerospace Technology (ICECA-2025)	RVS Technical Campus, Coimbatore, India.	13-Feb-26	National	979-8-3315-9928-7	https://drive.google.com/file/d/1QBY6IEGM64RCbOtjBDwwSbmeiGmUfG19/view?usp=drive	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/feedback/author/review-profile?authorIds=58739863700	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=8myQgJoAAAAJ&sortby=pubdate&citation_for_view=8myQgJoAAA	–
4	Aruna R Shet; Prajna K B; Jyoti Prakash Dhal; **Bommanaboyina Hari Krishna**; Senthil Kumar D; Hemalatha S	Integrating CNN-LSTM and Physical Models for Predicting Climate Extremes	–	2025 3rd International Conference on Sustainable Computing and Data Communication Systems (ICSCDS)	Erode, India	24-Sep-25	International	979-8-3315-1250-7	10.1109/ICSCDS65426.2025.11166735	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105018472870?origin=resultslist	gle.com/citations?view_op=view_citation&hl=en&user=FPteQ-EAAAAJ&citation_for_view=FPteQ-EAAAAJ:u-	–
5	Suresh Talamala; Ushasree R; F. Praveena; V. Manoranjithem; **Saginala Mastan**; Anvesh Perada	Enhancing Stock Market Predictions through CNN-Based Hybrid Deep Learning Models	–	2025 5th Asian Conference on Innovation in Technology (ASIANCON)	PIMPRI, India	16-Aug-25	International	979-8-3503-5699-1	10.1109/ASIANCON66527.2025.11280763	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105031366487?origin=resultslist	https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=elQES3sAAAAJ	–

6	Raj Kumar Gupta; Kotagiri Ganga Prasad; Vatsavai Lokesh Sai Kiran; **J. Harikrishna**; E. Veeramanipriya; A Jesintha Rani	AI-Driven Hybrid Optimization of BiFeO3-rGO Nanocomposites for High-Performance Energy Storage	–	2026 IEEE International Conference on AI Engineering and Innovations (AIEI)	NIT Jamshedpur, India	05-May-26	International	979-8-3315-6045-4	10.1109/AIEI69164.2026.11496670	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105040831927?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=hUeH9dwAAAAJ&citation_for_view=hUeH9dwAAAAJ	–
7	**S. Haseena**; V Balaraju; T. Hussain; Dr.V. Manoranjithem; Lalam Ramu; Sivaganesan Sivanantham	Reinforcement Learning and IoT-Enabled Framework for Optimal Planning of Solar PV-Based Electric Vehicle Charging Stations	–	2025 IEEE 6th Global Conference for Advancement in Technology (GCAT)	Bangalore, India	04-Feb-26	International	979-8-3315-1458-7	10.1109/GCAT66372.2025.11368378	SCOPUS & Google Scholar	NA	https://www.scopus.com/authid/detail.uri?authorId=606260210000	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=-kIVmIkAAAAJ&citation_for_view	–
8	V. Sai Anusha M. Pavan Kumar K. Pavan Kalyan S. Ravi Teja **Shaik Thabreez Basha** S. Siva Dinesh	Sewage water monitoring using Rasberry Pi	–	2025 International Conference on Sensors and Related Networks (SENNET) Special Focus on Digital Healthcare(64220)	Vellore, India	29-Aug-25	International	979-8-3315-9746-7	10.1109/SENNET64220.2025.11136078	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105016309682?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=NoOTFagAAAAJ&citation_for_view=NoOTFagAAAAJ:u5HHmVD_uO	–
9	st Swathi Tejah Yalla nd **Kottamidde Adisekhar Babu** rd Thangadurai. M	IoT–Naive Bayes and Random Forest Hybrid Framework for Cyclone Prediction and Early Warning in Smart Cities	–	2025 2nd International Conference on Intelligent Algorithms for Computational Intelligence Systems	Hassan, India	05-Nov-25	International	979-8-3315-3677-0	10.1109/IACIS65746.2025.11211098	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105023636768?origin=resultslist	https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=qReRhtAAAAAJ&sortby=titl	–
10	Danda Sreekanth; T Sri Lakshmi; S Rama Gopala Reddy; **D Sudhakar**; V D S Krishna; Venkata Ramana N	A Scalable Predictive Analytics Framework for Insurance Cross-Selling in Financial Services Using Classical Predictive Algorithms	–	2026 International Conference on Machine Learning and Autonomous Systems (ICMLAS)	Bangkok, Thailand	01-May-26	International	979-8-3315-7457-4	10.1109/ICMLAS67792.2026.11483859	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/authors/6063059910 0	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=E-nYv0IAAAAJ&citation_for_view=E-	–
11	S. Md. Riyaz Naik; Jithendra Kukutla; K. Yatheendra; **A.Uma Maheswara Reddy**; Farooq sunar Mahammad	SVM-Based AI Framework for Disaster Forecasting and Search & Rescue	–	2026 5th International Conference on Sentiment Analysis and Deep Learning (ICSADL)	Birendranagar, Nepal	31-Mar-26	International	979-8-3315-6883-2	10.1109/ICSADL67539.2026.11451836	SCOPUS & Google Scholar	NA	https://www.scopus.com/pages/publications/105036555899?origin=resultslist	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=ejIU4mMAAAAJ&citation_for_view=ejIU4mMAA	–

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Integrating IoT Blockchain and Artificial Intelligence for Sustainable Computing in Finance and Green Investment Strategies

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Contents

I. Introduction

Sustainable finance is a new term emerging most recently in the field of economics with mentioned increasing sustainable demand and climate risk signals of societal implications of climate risk issues. Massive transitions within the global finance industry and the climate change agenda are putting Social, Environmental and Governance (ESG)issues at the center of any finance investment activity and framing the climate change agenda as a collective cause [1] [2]. All of these participants (institutional investors, governments and corporations) are looking to find entirely new innovations and solutions to provide stability, fairness and equity and catch up simultaneously with the social environment and governance issue mess [3]. The reality of the current economic system is that there is no real time data collecting, decentralized transparency and no recognition or engagement with pro-active risk evaluation. Blockchain and AI have been touted as the best fixes for these states with real time accountability, digital ledgers and investment optimization opportunities [4]. IoT solutions will provide continuous/ accurate measures of carbon footprint, resource use and energy use to involved/designed interested parties sufficiently to garner enough data to help them understand asset greenness performance. At the same time, the issue presents itself of assuring data security, integrity and transparency, which are necessary for building confidence in ESG. Sustainable finance agreements facilitated by blockchain capabilities strengthen overall transparency of the sustainability-linked fina ockchain is reasonable because it circumvents the challenges of too many diff ated within an automated sustainability-linked financial agreement that improves ESG metrics, or more specifically, the carbon transition, and blockchain is the only technology that provides a very high level of certainty of a transaction [6]. Also, smart contracts allow for the easiest way to enable the compliance and tracking automation of the ESG standards, and they provide a means to indicate that when an engagement or transactional party leaves an intermediary in the contracting situation, that the proceeds of an exclusive investment remain aligned to sustainability standards [7]. AI technology, based on machine learning, abstracts large amounts of financial data, market changes, and green metrics together to give accurate predictions on aspects that include investment returns, fraud detection, and optimal sustainable mutual funds. Each of these considerations would require an integrated solution having a blockchain based automated transparency and predictive analytics monitor ESG data in real-time [8]. The proposed

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Early Enhancements Within IoT Technology Integration for Ecological, Security, and Economic Auditing in Underground Mines: A Review

| Conference paper | First Online: 19 November 2025

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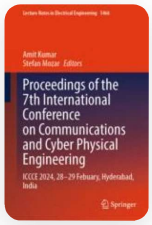

Proceedings of the 7th International Conference on Communications and Cyber...

(ICCCE 2024)

J. Chinna Babu, Adarsh Kumar, J. Mounika, T. Naresh Kumar, Y. Sudheer Kumar & S. V. V. Prasad

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1466))

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581 Accesses

Abstract

The existence of dangerous materials such as coal ash and greenhouse gases, responsible for countless mining-related tragic events, makes underground coal mining safety a top priority. This study emphasizes the necessity for real-time environmental monitoring

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RCA and LDPE partial replacement in bituminous mixtures

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ABSTRACT: As road construction materials become more innovative, construction companies are looking closer at waste materials, such as Recycled Concrete Aggregate (RCA) and Low-Density Polyethylene (LDPE) in bituminous mixtures, as possible sources. This research focuses on bitumen modified with LDPE weight percentages and aggregates partially replaced with RCA. Laboratory analysis and tests were conducted on the penetrative and ductile Marshal mixtures, as well as the impact values of mobile and durable characteristic aggregates. It was demonstrated that an increased binder content increases the likelihood of performance at 2-4% LDPE, and that the binder tends towards optimum softness and ductility as it incorporates more LDPE. The Marshall weight showed that more than 4% LDPE decreased the weight supported, while less than 4% increased it. It was found that 30% RCA replacement had the highest Aggregate Impact Value. The 4% LDPE and 30% RCA turned out to be the best combination in terms of strength with durability. This combination, while still having a balance with waste management and LDPE durable waste, is environmentally sustainable. This technique would be beneficial for eco-friendly pavement construction. Development can be sustainable as well.

Keywords: Bituminous Concrete, Pavement, RCA, LDPE

1 INTRODUCTION

The ongoing expansion of transportation networks and urban infrastructure has led to a substantial increase in demand for construction materials, particularly natural aggregates and bituminous binders. Traditionally, bituminous pavements are constructed using virgin aggregates and petroleum-derived bitumen, both of which are finite and energy-intensive resources [1–4]. The extensive consumption of these materials raises concerns regarding environmental sustainability, economic feasibility, and resource depletion. Concurrently, rapid industrialization, population growth, and modernization have contributed to a significant increase in waste generation, particularly construction and demolition (C&D) debris and plastic waste [5–7]. If not managed effectively, these wastes pose serious environmental threats, such as land scarcity for disposal, leachate contamination, and long-term degradation issues. Recycled Concrete Aggregate (RCA), produced by crushing and processing construction and demolition (C&D) waste, such as demolished concrete structures, has

Cloud-Enabled IoT Wearable for Real-Time Maternal and Fetal Monitoring

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Abstract. Maternal and fetus health surveillance is crucial in curbing pregnancy complications and maternal and fetal death though traditional hospital-based surveillance systems are periodic, resource-demanding, and demand physical presence making it to be slow in the early identification of critical health abnormalities, especially in the rural and home-based systems. To overcome these shortcomings, this paper introduces an IoT-based real-time maternal and fetal health monitoring system that is able to monitor physiological states continuously and provide timely remote warnings. The offered system combines several sensors, such as a body temperature sensor (DHT11), pulse sensor, SpO_2 sensor desaturating the blood oxygen, a load-cell-based weight sensor, and a tilt sensor, connected to an Arduino Uno microcontroller. The system constantly checks the body temperature of the mother, heart rate, saturation levels of oxygen, weight change, and posture or fall conditions in the body. SpO_2 monitoring helps to identify complications related to hypoxia early enough, and constant monitoring of weight helps to identify abnormal weight gain during gestation or retention of fluid. The sensor data are locally shown in a 16x2 LCD and wirelessly sent over to the Thing Speak cloud over the ESP8266 (NodeMCU) Wi-Fi module used in real-time visualizing, storing, and analysing the sensor data over time. A GSM module provides SMS notifications to caregivers and medical workers when the parameters are out of the safe range, an onboard notification buzzer gives warnings in immediate local areas. Due to its affordability, portability, and scalable Internet of Things architecture, improving access to and quality of maternal care.

Keywords : IoT, Maternal and Fetal Health Monitoring, SpO_2, Weight Monitoring, ESP8266, ECG, GSM, Real-Time Alerts, Healthcare IoT.

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International Conference on Intelligent Systems for a Sustainable Future (ISSF 2026)

Kanchipuram, India 12-13 March 2026

< PREVIOUS ARTICLE IN VOLUME NEXT ARTICLE IN VOLUME >

Maximizing Switch Utilization for Fast Battery Charging in Light Electric Vehicles

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A Human-Centric IoT-based Transformer Safety system with Proximity detection, Fault monitoring and Inductive Discharge Protection

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2026 1st International Conference on Artificial Intelligence & Machine Learning in Communication and Power Systems (AIMLCPS) | 979-8-3315-5920-5/26/$31.00 ©2026 IEEE | DOI: 10.1109/AIMLCPS68702.2026.11542332

***Abstract*—This paper shows an IoT-based transformer safety system designed to protect humans and distribution equipment in real time. Using the ESP8266 NodeMCU, the system continuously monitors temperature, current, and human proximity using low-cost sensors. When a person or object approaches the transformer beyond a defined danger threshold, the controller disconnects the relay, activates an inductive discharge mechanism, and sends real-time alerts through Firebase and a Telegram bot deployed on PythonAnywhere. The proposed method prioritizes human safety, reduces accident risks near transformer yards, and enables remote monitoring and maintenance control. Unlike conventional monitoring systems, the proposed framework integrates real-time human-in-yard detection with an automated inductive discharge mechanism, ensuring immediate isolation and energy dissipation when a hazard is detected, thereby adding a proactive human-safety layer.**

Keywords—***Transformer safety, ESP8266, Firebase RTDB, Telegram bot, human-in-yard detection, latching protection.***

I. Introduction

Distribution transformers installed in public and semi-public areas are often exposed to accidental human contact, unauthorized access, and environmental stresses, posing significant safety risks. Incidents such as a person unknowingly approaching an energized structure, the presence of animals near the equipment, or thermal and electrical stress can quickly lead to hazardous situations. Such events threaten human safety and often damage the transformer, resulting in power interruptions and costly field repairs. Conventional protective measures—typically fencing, visual warnings, and periodic manual inspection—offer only limited risk mitigation, as they do not provide continuous situational awareness or an immediate response to developing dangers.

Recent advances in the Internet of Things (IoT) have created opportunities for smarter, automated protection strategies. The growing body of IoT research highlights the value of interconnected sensing, real-time data exchange, and cloud-based decision systems for improving infrastructure reliability. For instance, Zanella et al. [1] emphasize how IoT technologies strengthen monitoring capabilities across city-level infrastructure, laying a foundation for responsive automation systems. Studies such as Dolatabadi et al. [2] demonstrate that low-cost sensors can effectively track transformer health parameters, while Ali and Illindala [3] discuss the importance of protective action under abnormal loading or fault conditions.

Alongside sensor technologies, cloud computing practices continue to expand the reach and utility of remote monitoring. Works such as Khan and Khan [4] examine cloud security considerations, and Siano [5] discusses how smarter grid frameworks benefit from real-time analytical tools. Broader IoT reviews. [6]outline how communication protocols and embedded systems support modern safety architectures. Specifically, Gupta et al. [7] and Patel & Roy [8] apply these concepts to transformer environments, showing how ESP8266-based communication and IoT-enabled fault detection improve reliability in distribution networks.

The architecture presented in this paper builds on such advancements by designing a human-centric IoT-based transformer safety system. The prototype employs an ultrasonic sensor to monitor nearby human movement, while ACS712 and DHT11 modules measure load current and transformer temperature, respectively [9]. The ESP8266 microcontroller evaluates these signals in real time and initiates automated protection when unsafe conditions arise. The system isolates the transformer through relay actuation and activates an inductive discharge mechanism to safely release stored magnetic energy. Cloud integration through Firebase, as explored in prior works like Sharma and Singh [10] and Kumar and Das [13], enables continuous logging and remote visibility. Furthermore, the use of ultrasonic sensing for safety applications aligns with findings by Patel and Shah [11], while security considerations follow principles highlighted by [12].

By combining edge-level sensing, automated protection, and cloud-assisted supervision, the proposed system aims to reduce human-related transformer accidents and enhance field safety in a cost-effective and scalable manner.

II. Design and Implementation

The overall architecture of the proposed safety system is divided into four layers—sensing, control, actuation, and cloud supervision. This structure is shown in Fig. 1, which highlights how sensor inputs, controller logic, and remote communication interact as a unified protection mechanism. The sensing layer collects distance, temperature, and current values, while the NodeMCU controller evaluates these

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Remission of Torque Pulsations in Power System Using UPFC Including PI and Fuzzy Controllers

Publisher: IEEE Cite This PDF

J. Sreerangarayalulu ; A. Suresh Kumar ; M. Padma Lalitha ; Nimay Chandra Giri ; Olena Rubanenko ; Oleksander Rubanenko All Authors

Abstract

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I. Introduction

II. Sub Synchronous Resonance Mitigation Using UPFC

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Abstract:
In power system transmission, to improve the power factor series capacitors are installed at various points. However, due to this inclusion, there is a drawback of SSR oscillations that needs to be mitigated. In earlier research, various methods were used to effectively remission of these oscillations. This paper presents an analysis of how effectively the fuzzy logic controllers over the conventional PI controllers can reduce the SSR oscillations along with the inclusion of a Unified power flow controller.

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Date Added to IEEE Xplore: 01 June 2026

Publisher: IEEE

ISBN Information:

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Recommended for You (Beta)

Performance Enhancement of Multi-Area System through RDA-Tuned Fractional Order Controller

Publisher: IEEE Cite This PDF

Boothapati Anil Kumar ; Ankarao Mogili All Authors

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III. RED DEER OPTIMIZATION ALGORITHM

IV. RESULTS AND DISCUSSIONS

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Authors

Abstract:
The paper examines the influence of the FOTID controller employing the Red Deer Algorithm (RDA) to address LFC challenges in a two-area electrical power system under deregulated conditions. Every region of the newly established two-area power system comprises a solar unit and a thermal unit. The FOTID Controller's settings are modified using the RDA technique. The RDA algorithm is a nature-inspired optimization approach that emulates the behaviors of gorilla groups. The performance of the FOTID Controller parameters, employing the RDA algorithm, rectifies the dynamic behavior of the two-area system by addressing frequency fluctuations in each area and changes in tie line power subsequent to a swift small load disturbance. To evaluate the concert enhancement of the approach under examination, the system is subjected to testing throughout several power transactions for minor load disruptions. The results of RDA-based FOTID controllers are compared to those of RDA-based PID and TID controllers.

Published in: 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)

Date of Conference: 28-29 January 2026

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Publisher: IEEE

ISBN Information:

Conference Location: Hyderabad, India

Intelligent Rail Safe Rover for Real-Time Crack and Obstacle Detection on Railway Tracks

Publisher: IEEE Cite This PDF

N Akshay Reddy ; Y Bharath Kumar ; Sita Devi Bharatula ; P. Bhaskara Prasad All Authors

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Abstract:
Despite the proven reliability of railway transportation, infrastructure-related failures remain a significant cause of accidents and derailments. To address this concern, this work proposes the design and implementation of an IoT-enabled railway track monitoring system based on the ESP32 micro controller. The system utilizes ultrasonic sensors mounted on a 180° servo motor for comprehensive surface scanning, allowing the detection of minor cracks or anomalies when the sensor-to-track distance exceeds 5 cm. Upon identifying such anomalies, the ESP32 activates a multi-level alert protocol: a) defect locations are transmitted with GPS coordinates via a GSM module, b) immediate automated voice calls are placed to relevant authorities, and c) real-time emergency notifications are delivered through the Blynk IoT platform. In addition, nearby signal lights are dynamically controlled to alert on-site personnel by transitioning from green to red status. The proposed methodology offers a fully automated, dynamic and cost-effective approach to improving rail safety and reducing manual inspections.

Published in: 2026 Contemporary Computing Innovations Conference (CCIC)

Date of Conference: 06-07 February 2026

DOI: 10.1109/CCIC68129.2026.11486053

Date Added to IEEE *Xplore*: 30 April 2026

Publisher: IEEE

Enhanced Reactive Power Compensation and Voltage Regulation in Power System Using ANN-Controlled Static VAR Compensator

Publisher: IEEE Cite This PDF

G.Mahaboob Subahan ; Pallaiahgari Sneha ; Palem Vasudeva Sai ; Bramhadandu Venkata Chandrika ; Daruri Surya Prakash All Authors

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Abstract:
This paper shows how an Artificial Neural Network can be combined with reactive power compensation so that a power system can automatically correct its voltage and improve power quality when the load or generation changes. The increasing penetration of renewable energy sources introduces variable generation and load fluctuations, causing voltage instability, harmonics, and inefficient utilization of reactive power. Traditional methods using FACTS devices, such as Thyristor-switched Static VAR Compensators (SVCs), provide effective solutions but often rely on fixed control strategies that may not adapt optimally to dynamic system conditions. In this work, an ANN-based controller is employed to intelligently predict and regulate reactive power compensation, ensuring rapid mitigation of voltage fluctuations and harmonic distortions. By learning the complex nonlinear relationships between network parameters and disturbances, the ANN enhances the performance of SVCs, enabling real-time adaptive control. Simulation results demonstrate that the proposed ANN-SVC framework improves voltage stability, reduces harmonic levels, optimizes reactive power utilization, and increases overall system efficiency, offering a cost-effective and intelligent solution for resilient and sustainable power system operation.

Published in: 2026 IEEE International Conference for Convergence in Computing Technology (I3CTCON)

Date of Conference: 14-15 March 2026 **DOI:** 10.1109/I3CTCON68242.2026.11507805

Implementation of Multi Agent Systems and Script Based Control Strategies for Energy Management of Solar -Wind Based Microgrid

Publisher: IEEE Cite This PDF

Praveen Kumar Reddy K ; Balachennaiah Pagidi All Authors

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Abstract:
Advanced Energy Management Systems (EMS) are required to control intermittency and complexity of operations as solar and wind power are increasingly penetrating hybrid microgrids (HMGs). The paper gives a comparison of two control paradigms implementation a decentralized Multi Agent System (MAS) architecture and a centralized script-based control strategy of solar wind microgrids. The strategies are compared using the fault tolerance, latency, scalability, and efficiency of the computation. This is because the MAS framework has better resilience, flexibility, and scalability, making it applicable in large and dynamically changing microgrids. The centralized script-based approach on the other hand provides a low overhead, simplified approach suitable to systems with small coordination needs, that are moderately complex. The decision-support framework is suggested to help grid operators choose the right EMS architecture that will strike the right balance between the operational reliability and computational efficiency. The findings offer useful pieces of information to the design of strong and effective renewablebased hybrid microgrids.

Published in: 2026 Second International Conference on Multi-Agent Systems for Collaborative Intelligence (ICMSCI)

Date of Conference: 02-04 March 2026

DOI: 10.1109/ICMSCI67830.2026.11469186

Date Added to IEEE *Xplore*: 13 April 2026

Publisher: IEEE

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A Novel Coupled-Inductor-Based Interleaved Boost Converter for Electric Vehicles

| Conference paper | First Online: 12 February 2026

| pp 301–312 | Cite this conference paper



Proceedings of International Conference on Power Electronics and Renewable Energy Systems

(ICPERES 2024)

Thomas Thangam ✉, M. Tamilarasi, K. Barathi, P. Malathi, K. Sarmila Har Beagam & K. Harinath Reddy

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1465))

Included in the following conference series: International Conference on Power Electronics and Renewable Energy Systems

61 Accesses

Abstract

Electric vehicles (EV) are considered as a better mode of transportation due to its un-contaminating nature. EV attains efficient sustainable charging system when incorporating with photovoltaic (PV) system, although the minimal output from PV is unable to satisfy the need of EVs. Henceforth, this paper proposed a novel coupled-inductor (CL)-based

Advancing a Hybridized Fusion-based Neural Network Model for Rapid Screening of Parkinson's Disease

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Abstract— **Parkinson's Disease (PD) must be identified early to promote patient outcomes and offer prompt treatment. Traditional diagnosis is primarily dependent on clinical examination, which is often unable to identify subtle, early motor and non-motor deficits. Recent breakthroughs in deep learning have the potential to extract PD biomarkers from handwriting, speech, gait patterns, and EEG waves. The majority of present studies employ single-modality analysis, which compromises accuracy and generalizability. The proposed approach presents a dual deep learning architecture that utilizes a Bidirectional Long Short-Term Memory (BiLSTM) network for temporal sequence processing and a 2-Dimensional Convolutional Neural Network (2D-CNN) for local discriminative feature extraction in space. Input features, i.e., spectrograms, digital signatures, or gait patterns, are pre-processed by the 2D-CNN to extract local discriminative features. Following processing, the BiLSTM learns bidirectional long-range temporal connections, resulting in a more accurate depiction of fine-grained disease-specific changes. Experimental outcomes on multimodal PD corpora, including handwriting, speech, and movement recordings, indicate that the new architecture outperforms baseline models in terms of high accuracy, robustness, and low false negatives. In general, the method is a non-invasive, reliable screening technique for early PD diagnosis with great potential for clinical and everyday use.**

Keywords—Parkinson's disease, Early detection, 2D-CNN, BiLSTM, Deep learning, Hybrid architecture.

I. INTRODUCTION

A chronic and progressive neurodegenerative disease, Parkinson's disease (PD) is characterized by non-motor deficits of speaking, writing, and walking as well as motor symptoms of bradykinesia, postural instability, stiffness, and tremor [1, 2]. Prompt, accurate diagnosis of PD is of prime importance for the successful management of the disease and deployment of timely therapeutic measures [3, 4]. Clinical observation-reliant traditional diagnosis may have the potential to overlook faint early-stage symptoms [5]. Thus, artificial intelligence (AI)-based computer diagnostic systems have been in the limelight for the past few years. Deep learning methods, particularly Convolutional Neural Networks (CNNs), have proven highly successful in extracting spatial features from biomedical signals such as handwriting images [6], speech spectrograms [7, 8], and gait patterns [9, 10]. Simultaneously, it has been demonstrated that sequence modeling techniques such as Long Short-Term Memory (LSTM) networks, along with their bidirectional generalizations (BiLSTM), deliver strong performance for identifying temporal patterns in PD-related data [11], [12]. The hybrid model of CNNs and BiLSTM enables both spatial and temporal patterns to be learned simultaneously, which is beneficial for modalities where both are significant, such as digitized spiral writings [13, 14], EEG signals [15], and wearable sensor signals [16, 17]. Several works have utilized CNN-BiLSTM models to identify PD successfully. For example, handwriting-based systems can differentiate between early PD patients and healthy controls [18], while speech-based models utilizing spectrogram inputs show high classification accuracy even in noisy environments [19]. Similarly, finger tasks drawn on smartphones have been utilized for easy and non-invasive early screening [20]. These multimodal approaches, which are often accompanied by advanced preprocessing mechanisms such as variational mode decomposition or Gabor transformations, are found to be superior diagnostic performers in comparison to traditional machine learning algorithms. Building upon these findings, the paper proposes a hybrid two-dimensional CNN (2D-CNN) and BiLSTM model for early PD detection. The 2D-CNN block acquired local spatial patterns from input modalities such as handwriting images or time-frequency speech representations, while the BiLSTM layer learned bidirectional temporal relationships. The architecture is configured to provide improved classification accuracy, robustness, and generalizability between datasets for early, non-invasive PD diagnosis.

Similar to this, Section II covers relevant literature, Section III outlines the proposed methodology, Section IV displays the results and analysis, and Section V concludes the work.

II. RELATED WORKS

Several research efforts have investigated deep learning models for the early prediction of Parkinson's disease (PD) from different input modalities, including handwriting, speech, and gait signals. In [4], a Hybrid CNN-BiLSTM

Interleaved and Switching Capacitor Hybrid DC-DC Circuit for Future Hybrid Electric Vehicles: An Experimentation Analysis

Publisher: IEEE Cite This PDF

CH Hussaian Basha ; Nagaraju Dharavat ; S Venkateswarlu Reddy ; Madhumati Padmakar Mohire ; Katne Sagar Datta ; Inturi Leela Tejashwini All Authors

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IV. Comprehensive Results of the Proposed System
V. Experimental Validation of Circuit
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Abstract:
Nowadays, the limited sources of energy are not given much attention. This is mainly because they also possess several gigantic disadvantages. Another one of its biggest drawbacks is the expense incurred during installation. They also require more maintenance work over a duration that is costly. Moreover, the sources that are not renewable cannot be used everywhere. They tend to release combustible, dangerous gases. Such matters of environmental issues and the degree of safety will minimize the attractiveness of these. Researchers are therefore putting their emphasis on renewable energy because of the problems. More convenient sources include renewable energy sources like wind energy, tidal energy, solar energy, and fuel cells. They are becoming topical in the field of sustainable power generation. However, the renewable energy production voltage is low. To limit this issue, an advanced voltage transformation circuit is developed in this paper. This converter possesses great signal amplification, high efficiency, and can support extensive variation of inputs, which makes it useful in cases of changing power sources. The three key features are low output ripple, fast transient response and small size, and high switching frequency, which makes them offer high performance out of small components. Onboard protection safety functions include thermal, overvoltage, and overcurrent protection to safeguard the reliability, and inrush currents are eliminated by means of soft-start.

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Date of Conference: 02-04 January 2026

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Publisher: IEEE

A Novel H2 Source Polymer Material Fuel Stack for Electric Vehicles with MPFNN, P&O, and IC Controllers: A Critical Analysis

Publisher: IEEE Cite This PDF

CH Hussaian Basha ; Nagaraju Dharavat ; S Venkateswarlu Reddy ; Fini Fathima ; Malgireddy Srikar Reddy ; Hema Rasala All Authors

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IV. Proposed Peak Voltage Tracking Methods

V. DC-DC Circuit for Polymer Module

Show Full Outline

Authors

Abstract:
Fuel cells are gaining popularity as an ecofriendly and clean source of energy due to their very high efficiency and green energy conversion. To be able to fully utilize the power generation potential of the fuel cell systems at hand, one should have a more or less efficient Maximum Power Point Tracking (MPPT) mechanism. This paper presents an advanced algorithm of an MPPT utilizing the Artificial Neural Network (ANN) model to fit the fuel cell systems that have the boost converter as the key component. The MPPT algorithm adopted is an ANN where training is done using data obtained through the simulation of another operating environment of a fuel cell. The ANN method is better adaptive than the other traditional methods, such as Perturb and Observe (P&O) and Incremental Conductance (IC). In MATLAB/Simulink simulations, the ANN-based controller achieves a convergence at approximately 25 percent and less than 30 percent steady-state oscillation reduction. There is a huge boost in tracking precision and an overall efficiency upswing of 8 percent. The findings have revealed that the ANN-based MPPT approach has superior characteristics when subjected to various fuel cell environments that optimize the recovery of energy in renewable energy generation systems.

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Date of Conference: 02-04 January 2026 **DOI:** 10.1109/EPREC66546.2026.11412103

A Novel Improvement of Wind Power Supply by Using the RBFN Algorithm

Publisher: IEEE Cite This PDF

Ch Hussaian Basha ; S Resmara ; S Venkateswarlu Reddy ; Fini Fathima All Authors

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Abstract

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I. Introduction

II. Literature Survey On Proposed Controller

III. Wind Power Station Layout

IV. Assessment of Operation Efficiency In Wind Energy Systems

V. Analysis of Wind Energy Systems In Artificial Intelligence Integrated Wind Energy Systems

Show Full Outline

Abstract:
The negative impacts of power-producing plants that utilize fossil fuel on the environment have led to efforts of more on alternative sources of energy (AES) in the production of electricity. Deposits of energy in the form of fossil deposits are also depleting, thus making the transition to a cleaner one relevant. Solar, wind, hydro, and tidal energy, also known as Renewable Energy Resources (RER), are gaining popularity. Among the systems that have been facing rapid development are wind and PV systems (solar photovoltaic). These are natural resources that cannot be controlled due to the change of seasons and weather conditions. Such variability may cause shifts in energy production, which affects the power system stability. This would be handled through the application of the Maximum Power Point Tracking (MPPT) methodology. MPPT enables renewable energy to be harvested with maximum energy in different situations. A Radial Basis Function Controller (RBFC) can be used to bring about an improvement in the efficiency of MPPT with a wind energy system. In a situation where wind turbines are equipped with a well-designed boost converter and RBFC simulated data show that it could render a constant flow of power.

Published in: 2025 International Conference on Power Electronics and Energy (ICPEE)

Date of Conference: 14-16 December 2025

DOI: 10.1109/ICPEE65973.2025.11410974

Date Added to IEEE *Xplore*: 04 March 2026

Publisher: IEEE

A Novel Improved Adaptive Network-Fuzzy Inference System Approach for Effective Battery Charging Control

Publisher: IEEE Cite This PDF

S Resmara ; Ch Hussaian Basha ; S Venkateswarlu Reddy ; Fini Fathima All Authors

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Document Sections

I. Introduction

II. Literature Study On Pv Modules

III. Determination of Vehicle Probability By Introducing the Adaptive Anfis

IV. Vehicle Voltage Change By Using Anfis

V. Analysis of the Proposed Vehicle System and Its Selection

Abstract:
Within the new paradigm of power management in EVs, there is a trend to integrate EVs into microgrid systems, and many of them are not at high voltage. These voltage drops are, as a rule, initiated by differences in energy yield through renewable energy resources such as wind. Regulation of charging/discharging of EV batteries- stabilizing across the smart grid is a mammoth task. In the study, an Adaptive Neuro-Fuzzy Inference System (ANFIS) shall be implemented to control the operation of the battery to maximize the usage of the electric vehicles and extend the battery lifetime. The augmented 0-constraint algorithm will be used in order to find efficient solutions along the Pareto-optimal frontier, which would assure optimal voltage regulation between the smart grid and EVs by providing optimal solutions. The given strategy has been applied to microgrid systems to determine the efficiency of EVs and how they can be used in various cases.

Published in: 2025 International Conference on Power Electronics and Energy (ICPEE)

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DOI: 10.1109/ICPEE65973.2025.11411357

Date Added to IEEE *Xplore*: 04 March 2026

Publisher: IEEE

ISBN Information:

Conference Location: Bhubaneswar, India

A Novel Rao MPPT Controller for PV Battery Charging-fed Electric Vehicles

Publisher: IEEE Cite This PDF

CH Hussaian Basha ; P. Sadanandam ; Nagaraju Dharavat ; S Venkateswarlu Reddy ; Katne Sagar Datta ; Inturi Leela Tejashwini All Authors

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II. Solar-fed 2-diode Energy System

III. Development of Proposed MPPT for PV Battery

IV. Analysis Rao MPPT-fed PV Power System

V. Conclusion

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Abstract:
As people become more environmentally conscious, the cost of using traditional thermal power is on the decline because of its dark side of water contamination and air pollution. Human health is also directly affected by these matters. This project utilizes solar as the energy source of a photovoltaic (PV)-based electric vehicle to foster cleaner energy. To obtain better performance representation, a 2-diode PV cell model is used. Even though solar energy requires more costs to generate, there is a solution to this problem, whereby an Advanced Universal Supply DC-DC converter will enhance the delivery of power and minimize the costs of the system. Solar panels create voltage in a non-linear fashion depending on sunlight. To cope with this, a Variable Step Rao algorithm has been presented to effectively trace the Maximum Power Point (MPP). This assists in getting the best voltage out of the solar array. Matlab/Simulink is used to design and simulate the PV-integrated DC-DC converter system. Its operation is verified by using an outside programmable power source.

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DOI: 10.1109/RCSM67767.2025.11507372

Date Added to IEEE *Xplore*: 11 May 2026

Publisher: IEEE

ISBN Information:

Conference Location: Bhopal, India

Scalable and Efficient Solution for EV based-Lithium-Ion Battery SOH Estimation through a Novel CatBoost-Enhanced Predictive Analytics

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***Abstract*— The automobile industry has focused heavily on Electric Vehicles (EVs) to reduce carbon discharges and solve global environmental issues in the world. Battery performance and health deteriorate over time and may result in the lost efficiency of EVs. The age-related degradation process is complex, making it a major problem to determine the State of Health (SOH) in Lithium-Ion Batteries (LiB). This work present a unique and effective method for SOH estimation that uses an optimized feature selection method and a new gradient-boosting algorithm. The feature set is an optimized version of a feature set created to solve a multi-objective optimization problem using Harris Hawks Optimization (HHO) algorithm. The CatBoost base method for ensemble learning algorithm is used because the nonlinear characteristics of LiB are essential to Battery Management System (BMS). The methodology was verified with the "Battery Health" dataset in the Python Software, which demonstrates a significant increase in accuracy as well as lower Root Mean Square Error (RMSE) of 1.5871, Mean Square Error (MSE) of 2.5190, and improved R^2 = 0.9497.**

***Keywords*—EV, Battery SoH, Lithium-Ion Battery, HHO, BMS, CatBoost, Python.**

I. INTRODUCTION

In order to diminish the negative impacts of climate change and establish a sustainable future, global attention has turned towards carbon neutrality. A major method to accomplish this is the injection of clean and RES into the power grids. However, because these technologies can be less stable, energy storage systems can help address the difference between energy generation and energy usage. This has led to massive growth in the energy and power industries [1-2]. Among many energy storage technologies, lithium-ion batteries (LIBs) are most suitable technologies for energy storage because their remarkable energy and power density, high efficiency, long-cycle life, and safe nature. LIBs are widely used as a power source in the transportation sector [3].

Their uses are becoming increasingly common as a key storage technology in the energy sector. However, a significant issue for the LIBs usage including power grids, in some mobile devices and EVs, is degradation, which dramatically affects their cycle life. Battery aging is one of the significant issues limiting the greater acceptance of EV [4]. Batteries degrade through time and usage which reduces performance of the system, service life, and safety. A battery's SOH reflects the capacity to store and provide energy compared to its original condition and serves as a reliable indicator of aging. Accurate SOH estimates are essential for EV BMS since they provide information on battery performance and support diagnostics [5].

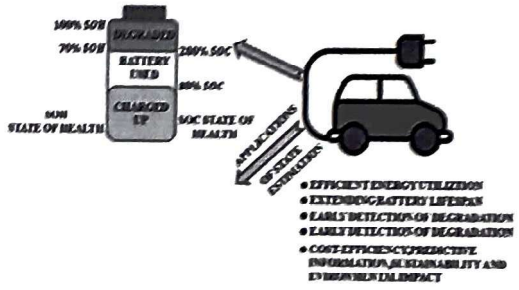

Fig. 1. Battery State of Health.

The Battery State of Health (SoH) is illustrated in Fig. 1. Capacities of batteries deteriorate irregularly over time, as a result of varying external environmental conditions and the complicated nature of the battery electrochemistry in actual use, with this irregularity complicating the SoH estimation. The battery is discussed as a black box with inputs and outputs, where the inputs are a function of the training data [6]. Input pre-processing tasks are addressed by preprocessing methods, and significant features are selected by solving multiple optimization problems with the HHO-based feature selection method. The features are efficient in capturing and representing the essence of the battery signals [7]. The HHO method of optimization is better than other approaches, as its searches remain successful explorations while avoiding local searches for improved optimal solutions.

Using With these extracted features to be used as the inputs, data-driven models estimate a battery's SOH and predict its Remaining Useful Life (RUL). Traditional data-driven models rely on the extraction of a set of relevant features from experimental battery data, which is then curated

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2025 IEEE 1st International Conference on Recent Trends in Computing and Smart Mobility (RCSM) | 979-8-3315-9126-7/25/$31.00 ©2025 IEEE | DOI: 10.1109/RCSM66751.2025.11239

Optimized Bidirectional Dual-Input Single-Output DC-DC Converter for Enhanced Electric Vehicle Integration

Publisher: IEEE Cite This PDF

V. Suryanarayanareddy ; Arun Kumar Thulasi ; P. Dhanaselvi ; Busireddy Hemanth Kumar ; P. Vishnuvardhan ; E. Parimalasundar All Authors

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Abstract:
This study helps to completely examine an optimized Bidirectional Dual-Input Single-Output (BDISO) DC-DC converter tailored for Electric Vehicle (EV) applications. Incorporating Photovoltaic (PV) technology with advanced Maximum Power Point Tracking (MPPT) functionality. The converter's dual functionality proves instrumental in managing power flow between various sources, optimising energy efficiency in EVs. The presentation covers the converter's operational principles, application in EVs, advantages [illegible] studies highlight successful implementations, while discussions on ch[illegible] comprehensive overview. This research not only contributes to the efficiency of EVs but also underscores the pivotal role of bidirectional converters in shaping the future of electric transportation. Utilising MATLAB software, comprehensive simulations were conducted to investigate the behaviour of the converters under different loading conditions, including various load scenarios and different input voltage scenarios.

Electrical and Electronics Engineering,
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Publisher: IEEE

Three-Phase Switched-Capacitor Five-Level Inverter for Electric Vehicle Application

Publisher: IEEE Cite This PDF

S. Sarada ; Ganesh Challa ; Manoj Kumar Debnath ; Jahnavi Palepu ; Ayushi Jain Sancheti ; Rompicherla Haritha All Authors

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II. PROPOSED 5-Level Switched-Capacitor Inverter

III. PULSE WIDTH MODULATION

IV. COMPARATIVE ANALYSIS WITH SIMILAR TRADITIONAL TOPOLOGIES

V. SIMULATION RESULTS

Show Full Outline

Abstract:
Switched-Capacitor (SC) or Flying Capacitor (FC), transformer less Multi Level Inverters (MLIs) are gaining attention for their voltage-boosting capability, making them suitable for low-voltage Renewable Energy System (RES) and Electric Vehicle (EV) applications. However, they typically require high-voltage switches, and multiple FCs. To address these challenges, this article introduces a self-balancing, 3-Φ, 5-level inverter that lowers the DC bus voltage requirement with only seven active switches per phase. In comparison to traditional inverters, the suggested inverter reduces DC bus voltage, voltage stress on FCs and switches to half. Operating principle, and modulation strategy are discussed in detail. At the outset, the efficacy of the presented topology is analyzed with various loading and operating conditions on 1-Φ basis, then the 3-Φ topology is employed to control the speed of the 3-Φ induction motor fed EV drive based on the SVPWM based V/f control method. MATLAB simulations outcomes confirm the feasibility of the suggested topology.

Published in: 2025 IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (SEFET)

Date of Conference: 09-12 July 2025 **DOI:** 10.1109/SEFET65155.2025.11255269

Digital Twin for Predictive Modelling in Smart Farming Based on Ensemble Neural Network Algorithm

Publisher: IEEE Cite This PDF

Sasikala S ; Sita Devi Bharatula ; P. Bhaskara Prasad All Authors

16
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Abstract:
The convergence of Digital Twin (DT), Internet of Things (IoT), and Artificial Intelligence (AI) presents a transformative opportunity for precision agriculture. Although promising, the application of virtual replicas of digital twins that enable bidirectional data flow between physical and digital entities remains nascent in this domain. This work proposes a novel DT framework for smart irrigation that uses a cloudbased EnergyPlus architecture and the Decision Support System for Agricultural Technology Transfer (DSSAT). The core of this framework is an advanced predictive model that utilizes embedded real-time sensor data (soil, weather, and crop) from agricultural fields. The model performs two critical functions: univariate time series forecasting of rainfall and multivariate forecasting of quarterly crop yield. A hybrid AI architecture, combining Gated Recurrent Units (GRU) with Bidirectional Long Short-Term Memory (BiLSTM) networks (GRU-BiLSTM), is developed to achieve high fidelity predictions. Empirical evaluation confirms the superiority of the model over existing benchmarks, achieving an accuracy of 98%, a precision of 97%, a recall of 99%, and an F1 score of 99%. This research validates the efficacy of integrating a sophisticated AI forecasting model within a DT environment, offering a powerful decision support tool for farmers to optimize irrigation strategies and improve agricultural productivity.

Published in: 2025 IEEE International Conference on Emerging Trends in Computing and Communication (ETCOM)

Model Predictive Control of Grid Connected 25 Level Inverter

Siliveru Sarada[1](✉), Ganesh Challa[1], N. Ravi Sankara Reddy[2], and Pagidela Yamuna[3]

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Abstract. Switched Capacitor-Multi level Inverter (SC-MLI) is appropriate for PV, Wind and sustainable energy applications because of the need for less no. of dc sources. This article presented the SC-MLI topology which consists of only two dc supplies and switches several capacitors in series for maximizing the no. of levels. The suggested inverter is self-balanced and offers reduced voltage stress on switches, resulting in lower switching losses. Moreover, this topology offers benefits over most known MLIs, such as less passives and switches, higher boosting capability, and less expensive. The efficacy of the suggested topology is tested in off grid mode for various operating conditions as well as grid-connected mode with Model Predictive Control for current control. This inverter was simulated in the Simulink section of the MATLAB.

Keywords: Grid Connected Inverter · Model Predictive Control · Switched Capacitor Multi Level Inverter

1 Introduction

Multi-Level Inverters (MLIs) can overcome power switch's voltage rating limitation, which lowers their cost [1]. The fact that MLIs employ numerous semiconductor devices to produce high voltage levels results in less neutral point potential, small dv/dt, and little voltage distortion, which is another advantage of MLIs [2]. Three inverter categories comprise Switched Diode based MLIs (SD-MLIs), DC Supply based MLI (DCS-MLIs), and other traditional MLIs. The SD-MLIs minimize the total number of switching components by substituting individual diodes for switches [3]. The second class of dc source based MLIs uses several independent dc voltage sources. Consequently, they can function in all R-load and R-L load ranges and do not require capacitors to adjust DC link voltage [4]. The third class of MLIs are switched-capacitor MLIs, which substitute capacitors for additional requirements and may produce high voltage levels with just one or a few DC sources. Among all kinds of MLIs, Switched Capacitor-MLIs (SC-MLIs) have drawn the interest of many academics recently since they employ one or more DC power supplies. These MLIs need numerous switches just like previous models to generate high output voltage causing tedious control and lower efficiency. Many MLI techniques have recently

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A. Kumar and S. Mozar (Eds.): ICCCE 2024, LNEE 1466, pp. 1903–1911, 2026.
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Innovative Thermoelectric Generator for Sustainable Energy Harvesting

Publisher: IEEE Cite This PDF

Sujatha B G ; N Chinna Alluraiah ; Soumya Mishra ; K Harinathreddy ; Harish Kumar Pujari ; V Nandagopal All Authors

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Abstract:
Thermoelectric generators (TEGs) are solid-state devices that convert waste heat into electrical energy using the Seebeck effect. This paper presents a TEG system's design, fabrication, and performance evaluation to recover waste heat for various applications. The system utilizes thermoelectric modules to generate electrical energy from temperature gradients. Experimental results show that the TEG can produce a maximum voltage under a temperature gradient of the hot side and cold side. TEGs convert waste heat directly into electricity using thermoelectric materials, offering a sustainable and maintenance-free energy solution. Recent advancements in material efficiency have improved the figure of merit
ability to operate without mo
to enhance energy efficiency
heat recovery and renewabl

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Integrated PMU and UPFC Approach for Dynamic Monitoring and Control of Voltage Stability

Publisher: IEEE

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S Venkateswarlu Reddy ; Pasala Gopi ; CH. Hussaian Basha ; Jarapala Siva Naik ; Y V Kalyani ; Anka Rao Mogili All Authors

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III. Voltage -Stability Margin on-Line Control Technique Using UPFC

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Abstract:
Voltage instability has become a critical challenge in modern power systems, as several large-scale blackouts worldwide have been directly associated with insufficient voltage stability margins. With the rapid advancements in synchrophasor measurement technology, real-time monitoring and control of system stability have gained significant importance. This paper proposes a comprehensive framework for online voltage stability margin (VSM) assessment and enhancement through the optimal integration of Phasor Measurement Units (PMUs) and a Unified Power Flow Controller (UPFC). PMUs are deployed strategically across the network to provide high-resolution, real-time voltage measurements, enabling accurate and continuous evaluation of the VSM. The UPFC is optimally positioned at the most critical bus, identified based on minimum active and reactive power load ability under severe line outage scenarios. By dynamically regulating bus voltages through controlled injection of active and reactive power, the UPFC mitigates voltage deviations and enhances overall system performance. The proposed approach ensures adaptive compensation under varying operating conditions, thereby improving the VSM and maintaining robust network stability. The effectiveness of the methodology is validated through extensive simulations on the IEEE 14-bus and New England 39-bus benchmark systems. Results demonstrate significant improvements in real-time VSM monitoring and control, highlighting the potential of PMU-assisted UPFC integration as a reliable solution for strengthening voltage stability in modern power grids.

Enhancing Disabled Mobility and Health Safety Through Iot-Integrated Smart Wheelchairs

Publisher: IEEE Cite This PDF

S Venkateswarlu Reddy ; Pasala Gopi ; Ch. Hussaian Basha ; Fahimuddin Shaik ; Jaracala Siva Naik ; Gogula Vyshnavi All Authors

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Abstract:
The Smart Wheelchair and Health Monitoring System for Disabled Individuals using IoT is an innovative assistive technology designed to improve both mobility and healthcare management for individuals with disabilities. By integrating advanced sensor technologies with Internet of Things (IoT) capabilities, the system enables continuous monitoring of vital health parameters, including heart rate, body temperature, respiratory rate, and fall detection, while providing intuitive wheelchair contro heartbeat sensor for tracking heart rate, a Dallas temperature sensor for mo nsor for measuring breath rate, and a MEMS sensor for detecting falls. A E hair navigation through DC motors and a motor driver, enhancing mobility. The collected health data is transmitted in real time to the ThingSpeak IoT platform via NodeMCU, enabling caregivers to access the users health status instantly. Additional features include a voice alert module to notify caregivers of abnormal readings, an LCD display for real-time visualization, and an emergency push-button for immediate assistance. This comprehensive and user-friendly system promotes independence, ensures proactive health monitoring, and enhances safety, representing a significant advancement in assistive technology and improving the overall quality of life for individuals with disabilities.

Department of ECE, Annamacharya University, Rajampet, Andhra Pradesh, India

Published in: 2025 Innovations in Power and Advanced Computing Technologies (i-PACT)

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2025 6th International Conference on Electronics and Sustainable Communication Systems (ICESC) | 979-8-3315-5503-0/25/$31.00 ©2025 IEEE | DOI: 10.1109/ICESC65114.2025.11212545

Dual Active Bridge Converter Design and Control for Grid-Tied Inverter

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Email: [1]ranga2k6@gmail.com,

Abstract. This research addresses the critical limitations of conventional control methods in Dual Active Bridge (DAB) converters used for grid-tied inverter applications, particularly their reduced efficiency, slower dynamic response, and inadequate power quality under varying load and grid conditions. The work proposes and implements advanced control strategies that integrate optimized response mechanisms, high-precision synchronization techniques, and adaptive control algorithms to enhance converter performance. These improvements aim to deliver accurate voltage regulation, superior transient response, and reduced harmonic distortion, thereby improving the overall power quality supplied to the grid. The proposed approach is validated through detailed simulation and experimental studies, which confirm notable gains in conversion efficiency, system stability, and operational reliability compared to existing methods. The outcomes demonstrate that the enhanced control framework not only optimizes the performance of DAB converters but also contributes to greater grid dependability and energy efficiency. Ultimately, this research provides a viable technological pathway for advancing grid-tied inverter performance, accelerating the integration of renewable energy sources, and supporting the transition toward sustainable and cost-effective power conversion solutions.

Keywords : DAB Converter, MPPT, Grid-tied Inverters, Grid Integration.

INTRODUCTION

Environment friendly power sources, especially sunlight based photovoltaic (PV) frameworks, definitely stand out lately as supportable options in contrast to customary petroleum products. In any case, coordinating these discontinuous energy sources with the matrix presents difficulties connected with power change proficiency, network security, and power quality. Photovoltaic (PV) energy change frameworks depend on PV boards to change over sun-oriented energy into electrical power, with board execution dependent upon natural factors like illumination and temperature. A key component of these frameworks is a power converter, which is tasked with enhancing energy extraction by managing momentum or Pv energy to reach the maximum power point (MPP). while keeping in constant contact with the heap [1-2].

In reasonable applications, where the result of a solitary PV module may not match load requests, numerous modules are interconnected in different series and equal setups. In addition to linking this power and voltage gap, different power converter zones are utilized, underscoring high proficiency and, when fundamental, a high voltage-change proportion to line up with load details. For example, independent applications, for example, siphoning and lighting frameworks, frequently situated a long way from the energy source, require voltage up-transformation to really limit transmission misfortunes [3].

Double Dynamic Scaffold (Spot) converters have arisen as key parts in tending to these difficulties by empowering productive power change and framework tied activity. This venture centers around the plan and control of a Touch converter for coordinating PV frameworks with matrix tied inverters, utilizing the capacities of MATLAB/Simulink. The Spot converter fills in as a connection point between the PV cluster and the network, working with bidirectional power stream while augmenting energy extraction from the PV exhibit. By executing progressed control calculations, this framework plans to accomplish proficient power transformation, lattice synchronization, and consistence with network principles. The combination of PV frameworks with the matrix requires cautious thought of different elements, including extreme power point following (MPPT) to streamline energy collecting, voltage guideline to guarantee lattice strength, and power quality administration to alleviate network unsettling influences. MATLAB gives a thorough stage to displaying, reproduction, control plan, and examination, making it appropriate for tending to these mind-boggling necessities. In this task, the parts of the framework, including the PV exhibit, Spot converter, and lattice tied inverter, are demonstrated and re-enacted utilizing MATLAB/Simulink. Control calculations are planned and improved to accomplish effective power change and matrix reconciliation. A far-reaching control technique is created to organize the activity of the Spot converter and network tied inverter, taking into account factors, for example, power stream control, voltage guideline, and lattice synchronization [4]. Through re-

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IoT Based Preservative System for Food Grade Item Using PV Technique

Publisher: IEEE Cite This PDF

O. Hemakesavulu ; Naarisetti Srinivasa Rao ; Ganganagunta Srinivas ; U. Narender ; M. Padma Lalitha ; S. Venkateswarlu Reddy All Authors

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Abstract:
Basic human needs include food, clothing, and shelter; food is essential to these needs, so we must preserve and use it properly. Fruits and vegetables are the primary source of nutrients in these foods, but their quality is greatly influenced by their freshness and shelf life, which can be affected by a number of outside variables, including humidity and temperature. The IoT based preservative system for food grade item using PV system is an innovative solution designed to monitor and detect food spoilage in real-time, ensuring food safety, reducing waste and stored for a limited period. This project offers a thorough analysis of how some fruits and vegetables-such as bananas, apples, oranges, tomatoes, and so forth-decompose and store. The humidity was between 90 and 95 percent, while the temperature was close to $32^{\circ}\mathrm{C}$. To detect whether the food is rotten or not, by monitoring the expelled gases from solid food and obtaining PH value of liquid food using sensors and then transmitting the data using IOT sensors. The different sensors are integrated by the system to provide real-time data on vital aspects like temperature, humidity, gas, and $\mathbf{pH}$ levels. The system utilizes various sensors such as the MQ4 for detecting bad odors, a pH sensor to measure the acidity level of the food, and the DHT11 to monitor temperature and humidity. When the system detects abnormal conditions, such as unpleasant smells or unsafe pH levels, it activates a buzzer to alert users and sends a notification via GSM. The system also features an LCD display that shows real-time status updates and uses LED indicators (green for normal and red for abnormal) to visually convey the food's condition. Data is uploaded to ThingSpeak via a Node MCU for remote monitoring. The system is powered by a solar panel, storing energy in a $\mathbf{12V}$ battery, ensuring continuous operation. This IoT-based system enhances food safety, promotes efficient food management, and pr...

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Conference Location: Glasgow, United Kingdom

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Prediction of Solar Power Using Machine Learning – Annamacharya University Case Study

Publisher: IEEE Cite This PDF

Padma Lalita M ; Hemakesavulu O ; Netaji Subhash P ; Pavan Kumar K ; Naveen K ; Naveen K All Authors

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Abstract
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I. Introduction
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Abstract:
The development of renewable energy on a global scale has resulted in a new area of research focusing on the forecasting of Solar energy to improve production and Grid integration. This project demonstrates a forecasting methodology to predict solar power generation from an environmental context by utilizing historical weather data, solar irradiance, and other relevant features. Focus areas like regression models, decision trees, and deep learning neural networks to expand the range of possibilities associated with the prediction's accuracy. These models were assessed using multiple indicators including $\mathbf{R}^2$ Score, MAE, MedAE, and RMSE. The results have proven that the application of more sophisticated techniques of advanced machine learning, especially deep learning and ensemble methods, yields higher accuracy level in the forecast of solar power generation than the traditional methods. The findings from this research will assist in the provision of automated and intelligent solar energy management systems with higher reliability, efficiency, and quick response to the changes in availability of solar energy. This project is done for specific location, Annamacharya university Rajampet, Andhra Pradesh, India.

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A Multi Port Power Converter for Electric Vehicle Applications

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Baya Reddy Lomada ; V Naga Bhaskar Reddy ; Ganga Geethika ; Poli Charitha Reddy ; Bogasamudram Damodhar Reddy ; Kolavala Bhanu Prakash Reddy

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II. Proposed Method

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Abstract:
This paper presents a multi-port power converter for electric vehicle (EV) applications integrates a bidirectional DC-DC converter with a combined battery and supercapacitor energy storage system. The proposed converter facilitates efficient energy management and power flow control between the storage elements and the EV load. The Simulink model demonstrates two primary operating modes. In Mode 0, the battery is charged from an external source (e.g., the grid), while the supercapacitor supplies power to the load. During this mode, switch S1 is off, while switches S2 and S3 are on. In Mode 1, the battery powers the load, with any excess energy used to charge the supercapacitor. In this case, switches S1 and S3 are on, while switch S2 is off. The bidirectional DC-DC converter operates as a boost converter when the input voltage is lower than the desired output (e.g., 200 V input, 500 V output). Conversely, it functions as a buck converter when the input voltage exceeds the required output (e.g., 500 V or higher input, 500 V output). This flexible operation allows the converter to efficiently manage power flow under various conditions. The proposed multi-port converter offers advantages such as improved energy efficiency, reduced battery stress, enhanced power delivery capability, and regenerative braking functionality. The Simulink model provides a platform for analyzing and optimizing the converter's performance for EV applications...

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An Enhanced Low Switching Frequency Modulation-Based Symmetric Multi-Level Inverter for Harmonic Mitigation

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***Abstract*— Multi Level Inverter (MLI) converts DC into near-sinusoidal AC with low Electro Magnetic Interference (EMI) and component stress, making them appropriate for medium and high-voltage applications like Renewable Energy Systems (RES). This study presents an enhanced Low Switching Frequency Modulation (LSFM) approach for an MLI to efficiently provide high-quality output voltage for medium-power applications. The LSFM-based MLI produces a stepped voltage waveform that closely approximates a sinusoidal, lowering Total Harmonic Distortion (THD) and improving overall system performance. A new switching angle calculation approach for the proposed modular MLI is presented. The suggested method eliminates initial guessing in switching angle computation and guarantees ideal switching angles for minimal THD. In contrast to previous methods, this approach solves difficult transcendental equations and optimizes switching angle calculations. Its THD reduction potential and computational efficiency are compared to the Nearest Level Modulation (NLM) switching algorithm. The THD values for 5, 9, 15 and 25 level inverters are found to be 17.06%, 8.82%, 4.97% and 2.73% using NLM, whereas for LSFM scheme 16.39%, 8.38%, 4.97% and 2.66% were obtained. The simulation outcomes ensure the efficacy of the proposed system in mitigating the harmonics compared to traditional methods.**

Keywords — Multi Level Inverter – Renewable Energy Systems – THD – NLM – LSFM.

I. INTRODUCTION

Multi-Level Inverters (MLIs) used in medium- and high-voltage applications require more power switches and discrete DC voltage sources, resulting in low power switch ratings. MLIs can produce approximate sinusoidal waveforms without the use of high-frequency modulation techniques. Increasing the number of discrete voltage levels lowers the Total Harmonic Distortion (THD). Also, MLIs exhibit lower switching losses compared to two-level inverter topology [1]. These features allow transformer-less Photo Voltaic (PV) inverters to integrate with the grid connection [2]. Several MLI topologies have been devised to improve power quality while using fewer DC sources and switches at lower ratings [3]-[4]. The modulation strategy utilised in a certain architecture affects both output voltage quality and inverter efficiency. Numerous modulation techniques are suggested to enhance harmonic mitigation and minimize the losses based on fundamental switching frequencies (low and/or high) [5].

High switching frequencies have numerous pulses per cycle, while fundamental switching frequencies only have one or two pulses over every cycle. High-Frequency (HF) switching algorithms include traditional PWM techniques viz. Sinusoidal Pulse Width Modulation (SPWM), and Space Vector Modulation (SVM). Low Frequency (LF) switching techniques include Selective Harmonic Elimination (SHE), Nearest Level Modulation (NLM), etc. Additionally, techniques include both carrier-based PWM (CBPWM) and Carrier-Less PWM (CLPWM), as has been reported.

A high switching frequency technique offers faster transient response but results in more switching loss and lower efficiency. They are ideal for low-power applications in which power quality is of primary concern over conversion efficiency. Low switching frequency approaches are recommended for medium-voltage and high-power applications to reduce thermal stress on switches caused by significant switching losses [6]-[7]. However, a low switching frequency results in a more distorted output voltage [8]. While low-pass filters can reduce higher-order harmonics, PWM cannot eliminate lower-order harmonics, which are more common. SHE is the most effective solution for removing low-order harmonics as it allows for precise switching angles [9]. However, the SHE technique has challenges in solving a system of nonlinear algebraic equations. These multi-angle trigonometric equations are derived from the study of Fourier series. These equations can have many solutions, a unique solution, or no solution within a specified Modulation Index (MI) range [10]. Recently, Fundamental Modulation (FM) has been proposed in [11], and a comparative study is made between LF and HF in [12].

Moreover, Metaheuristic optimization approaches are commonly employed to minimize harmonics in MLIs. A Particle Swarm Optimization (PSO) was proposed in [13] for THD minimization. The PSO technique, designed for a framework with unequal DC sources [14]-[15], led to an increase in switching angles. However, these optimization strategies require an initial prediction. Several switching strategies, including NLM, SHE, and SVM, have been given

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MPC Based Grid-Connected Three-Phase Switched-Capacitor Nine-Level Inverter

Publisher: IEEE Cite This PDF

S. Sarada ; Ganesh Challa ; Chittiveli Pallavi ; Gala Mahi Prabhanjali ; Revaraju Nandini ; Batthala Sai Charan All Authors

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II. Grid Connected 3-Phase 9LI

III. PULSE WIDTH MODULATION

IV. Direct Model Predictive Current Control

V. RESULTS AND DISCUSSION

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Abstract:
A new Switched Capacitor (SC), 3-Φ unique-source nine-level inverter (9LI) is designed to provide nine levels in line voltage. The inverter is appropriate for low-voltage grid-connected solar systems. Due to the switching pattern, the primary dc source is isolated and the SC units supply voltage during voltage generation. This design automatically balances SC units' voltage and boosts output voltage to four times the single dc source. The suggested system requires less control complexity than traditional inverters. The modular design boosts voltage levels in output. The recommended inverter configuration works effectively under various 1-Φ and 3-Φ working circumstances. The Model Predictive Control (MPC) is a powerful control approach in power electronics that predicts future behavior and picks the appropriate action. Inverters, rectifiers, motor drives, and grid-connected converters use it extensively. In this work, a Direct Model Predictive Current Control (DM-PCC) was employed for the grid tied/connected 3-Phase 9LI (GC3P9LI) for the control of grid current. The proposed system was implemented in Simulink platform of the MATLAB. The simulation outcomes validated the performance of suggested topology.

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DQN Based Grid-Connected Single-Phase Inverter

Publisher: IEEE Cite This PDF

Ganesh Challa ; S. Sarada ; L. Vishnu Vardhan Reddy ; K. Sudeepthi ; S. Yusuf ; K. Sujitha All Authors

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II. DEEP Q-LEARNING NETWORK
III. SIMULATION RESULTS
IV. CONCLUSION
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Abstract:
This paper investigates the controller for grid-connected 1-Φ inverter utilizing H-bridge configuration, focusing on the application of reinforcement learning through the Deep Q-Learning Network (DQN) algorithm. H-bridge inverters are essential for converting DC into AC for seamless integration into the grid. The proposed approach employs DQN to optimize control strategies, allowing the inverter to dynamically adapt to varying grid conditions and load requirements. The study emphasizes the importance of maintaining power quality by synchronizing output current with grid voltage while minimizing harmonic distortion. Advanced control techniques, including digital Pulse-Width Modulation (PWM), are implemented to enhance inverter performance. A comprehensive simulation environment in MATLAB is developed to train the DQN agent, enabling it to learn optimal control policies through real-time interaction with the inverter system. The simulation results demonstrate significant improvements in response time, stability, and efficiency compared to traditional control methods viz Proportional Integral (PI) control. This research highlights the potential of integrating reinforcement learning techniques with H-bridge inverter technology. Overall, the findings contribute to advancing smart grid solutions by providing robust and adaptive control mechanisms that promote sustainable energy integration and enhance grid reliability.

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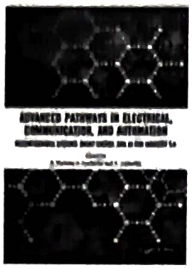

IoT Based LPG Gas Level Detection and Sensor Alert System (E-Mail/SMS)

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Analysis and Design of Fixed-Frequency Control for Solar Applications using Phase-Shift Full-Bridge (PSFB) Resonant Power Converter

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Comparison of torque pulsations mitigation in power system using PI and fuzzy controllers with UPFC and SSSC

By J Sreeranganayakulu (/search?contributorName=J Sreeranganayakulu&contributorRole=author&redirectFromPDP=true&context=ubx), A Suresh Kumar (/search?contributorName=A Suresh Kumar&contributorRole=author&redirectFromPDP=true&context=ubx)

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Intelligent Blood Bank Management Using Internet of Things for Enhanced Healthcare Delivery

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In book: Integration of Internet of Things and Machine Learning (pp.131-150)

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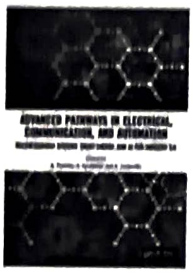

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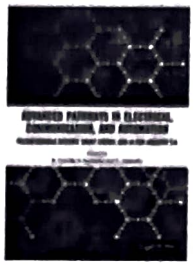

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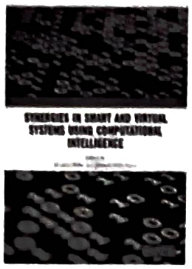

Comparative performance evaluation of RSMLI for PV application

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Design and simulation of dual active bridge converter for EV battery charging applications

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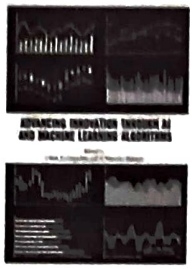

Dual source novel nine level inverter design with trinary geometric DC links to produce highest output voltage levels

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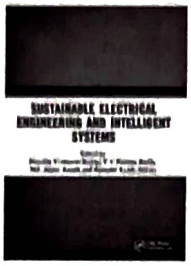

Implementation of neural network controller for grid connected wind-solar PV charging station

By Nallolla Chinna Alluraiah (/search?contributorName=Nallolla Chinna Alluraiah&contributorRole=author&redirectFromPDP=true&context=ubx), M. Ahamad Basha (/search?contributorName=M. Ahamad Basha&contributorRole=author&redirectFromPDP=true&context=ubx), K. Hariharan (/search?contributorName=K. Hariharan&contributorRole=author&redirectFromPDP=true&context=ubx), K. Jaswanthi (/search?contributorName=K. Jaswanthi&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Harish (/search?contributorName=Y. Harish&contributorRole=author&redirectFromPDP=true&context=ubx), Mohammad Taufiqui Arif (/search?contributorName=Mohammad Taufiqui Arif&contributorRole=author&redirectFromPDP=true&context=ubx)

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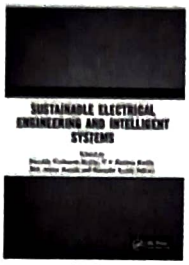

Intelligent harmonic mitigation and power quality improvement in a microgrid with a unified power flow controller (UPFC) for grid-connected and islanded operations

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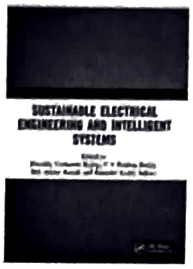

Multi-objective ant nesting algorithm strategy for phasor measuring unit placement that maximizes power system state estimation

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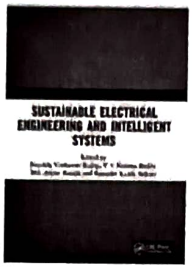

Optimal PMU placement for power system observability considering voltage stability constraints using artificial protozoa optimizer algorithm

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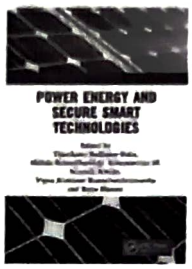

Techno-Economic Analysis and Optimization of an Off-Grid Hybrid Systems for Sustainable Energy Solutions

By Pujari Harish Kumar (/search?contributorName=Pujari Harish Kumar&contributorRole=author&redirectFromPDP=true&context=ubx), N. Chinna Alluraiah (/search?contributorName=N. Chinna Alluraiah&contributorRole=author&redirectFromPDP=true&context=ubx), Kumar P. Sunil (/search?contributorName=Kumar P. Sunil&contributorRole=author&redirectFromPDP=true&context=ubx), Soumya Mishra (/search?contributorName=Soumya Mishra&contributorRole=author&redirectFromPDP=true&context=ubx), K. G. Nagraja (/search?contributorName=K. G. Nagraja&contributorRole=author&redirectFromPDP=true&context=ubx), G. Rashmi (/search?contributorName=G. Rashmi&contributorRole=author&redirectFromPDP=true&context=ubx)

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Performance and emission profiles of CI engine with aluminium oxide- reinforced polymer composite in biodiesel blends

Rakesh Dubey[1,*], Ch. Sreenivasa Rao[2], Hariprasad Tarigonda[3], B Venkatesh[4], Saurabh Sharma[5],Ravi Kant Singh[1], Rajeev Kumar[1], R Jyothu Naik[1]

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Abstract. The growing need for cleaner and more efficient fuels has led to extensive research on nanotechnology-based fuel additives. Among these, aluminum oxide nanoparticles have shown significant potential in enhancing biodiesel performance by improving thermal efficiency, combustion characteristics, and emission reduction. This study examines the impact of aluminum oxide as an additive in B10 biodiesel blends, emphasizing its thermophysical properties and combustion behavior. Experimental findings indicate that the B10Al100 blend enhances brake thermal efficiency (BTE) by 10% over diesel and 16.5% over B10 at maximum load. Additionally, brake-specific fuel consumption (BSFC) decreases by 14%, demonstrating improved energy utilization. Emission analysis reveals a 10.8% reduction in NOx emissions compared to diesel and 14.5% compared to B10 in the B10Al150 blend. The B10Al100 blend reduces CO emissions by 32.7% over diesel and 29% over B10, alongside significant reductions in hydrocarbon (HC) and CO_2 emissions. These enhancements are attributed to aluminum oxide's high thermal conductivity and catalytic properties, which improve fuel atomization and combustion efficiency. Further research is required to optimize nanoparticle dispersion, fuel stability, and material compatibility for wider applications in polymer and composite-based fuel systems.

1. Introduction

The field of polymers and composites presents innovative solutions for enhancing the performance and environmental sustainability of diesel engines. By incorporating polymeric additives or developing nanocomposite biodiesel blends with materials such as aluminum oxide, it is possible to improve fuel stability, combustion efficiency, and emission characteristics. Polymers not only act as dispersing agents but also contribute to the formation of nano-enhanced composites, enabling molecular-level modifications of fuel properties. Diesel engines have historically been regarded as benchmarks of efficiency compared to their spark-ignition counterparts [1,2]. However, their widespread adoption has come with significant environmental concerns, particularly elevated levels of nitrogen oxides (NOx) and particulate matter (PM),

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Effect of TiO_2, BN, and WC Nano-Reinforcement on the Mechanical and Tribological Performance Al7075 Hybrid Composites

Kishorekumar Nandyala[1], *G I K* Durga Bhavani[2], *Zuriah* Syed[3], *Anthani* Kamala Priya[4], and *Balram* Yelamasetti[5*]
[1]Mechanical Engineering Department, Annamacharya University, Rajampet, India.
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[5]Department of Mechanical Engineering, Sreyas Institute of Engineering and Technology, Nagole, Hyderabad-500068, Telangana, India.

Abstract. Lightweight alloys that can endure mechanical loading and resist wear are increasingly important in modern engineering. With this need in view, the present work examines how Al7075 responds when reinforced with a combination of TiO_2, BN, and WC nanoparticles. The composites were produced through an ultrasonic-assisted stir-casting process, where the stirring duration, melt temperature, and reinforcement levels (3%, 6%, and 9%) were varied in a planned manner using a DOE approach. Nine different compositions were cast and later tested for their tensile strength, hardness, wear behaviour, and microstructural features as per standard procedures. The experimental results show that the addition of these nanoparticles offers a clear improvement over the base alloy. The sample containing 9% TiO_2 + BN displayed the highest hardness, while several other hybrid mixes also demonstrated better wear resistance, largely owing to improved bonding between the matrix and the particles. SEM examination supported these findings by showing a reasonably uniform dispersion of particles and fracture surfaces that reflected both ductile and brittle modes. The outcomes of the study indicate that combining TiO_2, BN, and WC provides a practical way to enhance the mechanical and tribological performance of Al7075, making the developed composites suitable for structural applications.

1 Introduction

There is an increasing demand for the development of advanced engineering materials characterized by improved mechanical performance. Among several classes of such materials, Al-MMNCs have attracted widespread interest because they can be designed to guarantee low weight combined with excellent mechanical and tribological properties. The addition of nanoparticles to aluminum alloys has enabled the design of composites that

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Novel Approach for Design of Autonomous Multi-Robot Networks with Efficient Deployment and Obstacle Avoidance in Unknown Environments

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An Autonomous Multi-Robot (AMR) system is a network of robots that are connected through ad hoc networks and thus collaborate for different tasks such as exploration and search/rescue. A model named the Autonomous Multi-Robot Energy-efficient Deployment and Docking Optimisation (AMREDO) has been developed which combines several modules such as multi-robot network deployment, LiDAR pre-processing, hybrid docking control, and SNN-based navigation. Through a weighted utility function, the components of the model command navigation, network formation, and docking in complex environments, thereby increasing the efficiency of operations. They minimize the noise in LiDAR scans. The hybrid docking control method integrates visual perception and LiDAR alignment for staging docking phases based on a Finite State Machine (FSM) architecture. The visual PID controller helps the drone in its movements through detection and alignment, whereas the SNN-based Navigation module changes the sensor inputs into spiking neural signals for enhanced decision-making. The evaluation of the method is a precision & recall graph of 0.98, a precision of 1.00, a recall of 0.03, $\mathrm{F1}$-score graph of 0.88.

Published in: 2026 International Conference on Electronic Systems and Intelligent Computing (ICESIC)

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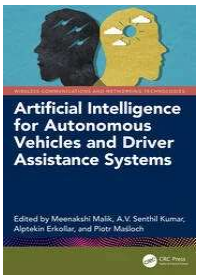

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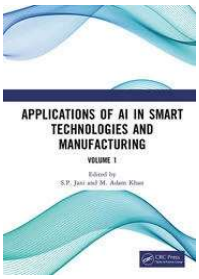

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Experimental evaluation of self-healing concrete: Strength enhancement and microstructural characterization

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Sustainable development of ternary blended concrete: Experimental study on strength and durability characteristics

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II. Proposed Structure of GAAFET

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A cylindrical gate-all-around field-effect transistor (GAAFET) has been simulated to understand the effect of the gate metal workfunction on the device performance. The device structure includes a silicon nanowire channel completely surrounded with a thin oxide layer and a TiN gate electrode to provide a strong electrostatic control and excellent short-channel effects immunity. The gate workfunction was varied from 4.47 eV to 4.56 eV and was systematically studied for its effect on threshold voltage, on-current, off-current, subthreshold swing, transconductance, electric field distribution, and recombination rate. The results showed that by increasing the gate workfunction led to a positive shift in threshold voltage, lower off-state leakage current, decreased recombination activity, and lower peak electric fields to improve device reliability and leakage control. In contrast, a lower workfunction value improved on-current and transconductance, which improved drive performance with higher leakage. The device described, with a gate workfunction of 4.56 eV, reduces off-current by over 64% to 95%. The device achieves a similar subthreshold slope (61 mV/dec vs 64–71 mV/dec) as existing architectures, while obtaining significantly lower off-state leakage current, leading to improved electrostatic control without sacrificing the switching efficiency.

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Home monitoring is steadily replacing omnipresence because of its many advantages. Given the current state of affairs and advancements, the house motorization structure can be appropriately controlled by SMS, messaging, or other apps. Regardless, industry players and conventional experts have recently shown a great deal of interest in the Internet of Things (IoT). The advent of devices such as the Samsung Sharp Things, Google Home, and Amazon Resonation, among others, has brought particular attention to the Splendid Home industry. Creative, incisive, best-in-class plans are produced by an industry's augmentation. The objective of this work is to design a conservative, dependable setup that may be widely applied in households with little to no experience. Amazon Cloud, Amazon Discourse Administrations, and Amazon Reverberation power our framework. The Arduino ESP32 is the hardware that is utilized to add wise characteristics to unappealing houses. Understand the different components of our system and demonstrate how successfully it tries to turn on and side-street our devices. Voice commands should be used to operate any devices or equipment that you have at home. On the other hand, because of this, automated homes will not match conventional residences as well. "Use IoT and Alexa to turn your house into a smart heaven. You can effortlessly use your voice to manage the lighting, thermostat, and security. Take pleasure in a house that adapts to your requirements, providing convenience and energy savings at your fingertips.".

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An electrical system that is becoming more complicated in all areas, including distribution, transmission, monitoring, and load systems, is the Distribution and Transmission Line Security Monitoring and Protection System. In order to quickly respond to any thefts, this system combines real-time data processing with sophisticated monitoring tools to identify irregularities. A high voltage transmission is needed. Electricity is transmitted by high voltage transmission. Electricity is crucial for comprehending and tracking the system's behavior.

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Abstract

Haze is when fine particles like smoke, dust, and water droplets in the air make it difficult to see clearly and distort light. This can affect the sharpness, contrast, and colors in pictures. To fix this, we've come up with a new way to remove haze from both remote sensing and regular images. We start by breaking the image into patches (small groups of pixels) and figuring out the atmospheric light for each patch. Then, we smooth it using a guided filter. After that, we calculate the transmission map using an improved dark channel prior, which includes a dark channel prior and a combined window filter to reduce unwanted effects. We tested this method on images from the ground and remote sensing, and it worked well. So, our method can restore images by dealing with uneven atmospheric light, minimizing unwanted effects, and producing clear, detailed, and natural-looking results.

ECG Arrhythmia Classification Through Synergy of Pattern and Machine Learning with Fisher's Criterion

Conference paper | First Online: 19 November 2025
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K. Chandrahasa Reddy, Y. Pavan Kumar Reddy, Y. Sunanda ✉, K. Shankar & M. Ravi Kishore

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Using electrocardiogram (ECG) data, this study presents an algorithmic framework for identifying cardiac arrhythmias, specifically classifying Normal, Ventricular Tachycardia, and Fibrosis. The algorithm consists of several steps, such as preprocessing the data, visualizing the data using a histogram, and using Gaussian parameters to model data distributions. Finally, Bhattacharyya distance computations are performed to evaluate the degree of class separation. The system uses a variety of methods in the classification phase, including a 1-D convolutional deep residual neural networks, Principal Component Analysis (PCA) for reduction of size, Linear Discriminant Function (LDF), and K-Nearest Neighbhours (K-NN). The study is noteworthy for examining comparative Receiver Operating Characteristic (ROC) curves, which emphasize the performance of the approach with particular attention to sensitivity and specificity. This all-inclusive method integrates machine learning, statistical analysis, and visualization techniques in advancing the

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Medical image fusion is an important computer-aided technique that combines critical elements from diverse medical pictures to improve diagnostic detail and accuracy. Despite recent advances, many fusion systems fail to provide enough information and textures for accurate disease identification, generally due to insufficient noise removal from the original medical image. In response to these problems, we offer a unique fusion technique designed for multimodal medical imaging. Our method uses fidelity-driven optimized (FDO) reconstruction to maintain important information while reducing noise impacts. Furthermore, we present a rank-coefficient optimization strategy for reducing the impact of noise on multiple mediums medical imaging Furthermore, we recommend the use of a repetitive detail preservation strategy to incorporate extra data as well as textures in the initial multimodal medical images while retaining high resilience. The final product demonstrates the capabilities of our innovative fusion technology. Extensive studies have proved the resilience of our technique, notably in dealing with noisy medical images, highlighting its potential for use in diagnostic applications.

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Abstract

Enhancing the visual clarity of underwater images is a significant challenge due to the adverse impacts of water and lighting conditions. Color imbalances, low contrast, and limited visibility of details can hinder the interpretation of underwater images. The proposed approach employs a fusion strategy characterized by multiple weights and granularity levels, effectively integrating diverse image processing methods to tackle the unique constraints inherent to underwater imaging. The core of our method involves addressing color imbalances through precise white balance correction applied to input underwater images. Notably, adaptive histogram equalization with limited contrast is anticipated to play a pivotal role in enhancing image contrast while preserving essential features. A critical phase of this investigation entails evaluating the proposed technique using established quality metrics like UIConM, UIQM, and UCIQE. These metrics are poised to provide valuable insights into the efficacy of the technique in elevating the quality of underwater images. By elevating image quality and enhancing clarity, the proposed approach is poised to facilitate more precise analysis and informed decision-making within the challenging context of underwater environments.

Detection and Classification of Lung Cancer through Integrated Image Processing and Machine Learning Approaches

Publisher: IEEE Cite This PDF

Umakanth Basineni ; Fahimuddin Shaik All Authors

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Abstract:
Since lung cancer has few symptoms and it might be difficult to spot lung nodules in medical imaging, prompt detection is essential to improving the survival rate of patients. Innovative, non-invasive alternatives are needed because traditional diagnostic techniques are frequently intrusive and expensive. The objective of this research is to improve the effectiveness and precision of diagnosis by examining current machine learning models and creating a new strategy. It uses a methodical approach that includes gathering images, preprocessing them, extracting features, and integrating AXS-LCNet with a Multiclass SVM Classifier using the large Lung Image Database Consortium (LIDC) dataset. Simplifying diagnostic workflows, minimizing invasive procedures, lowering healthcare costs, and improving accessibility are the main goals to facilitate early treatments and improved patient outcomes.

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Conference Location: BELGAUM, India

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Artificial Intelligence and Internet of Things Assisted Smart Power Converter for Renewable Energy Systems

Publisher: IEEE Cite This PDF

V. Senthilkumar ; K. Naganarasaiah Goud ; S. Santhoshkumar ; P. Dhanush ; P. Nivethkumar ; K. Pugazhenthi All Authors

11
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IV. Conclusion

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Abstract:
Due to the increasing demand for efficient generation, storage and utilization of energy in grid interfaced renewable energy systems, high efficiency power conversion techniques have gained tremendous importance. The core problem of efficiency in energy conversion, the quality of electrical power and scalability of systems are all attempts to address proposed methodology. The primary focus is on proposing a hybrid power conversion system by incorporating renewable energy and IoT-based monitoring and control systems for operating efficiency in real-time applications. The research work gap reviewed in the first part of this paper is to convert at maximum efficiency with minimum cost and complexity. The Trained proposed solution implements advanced mechanisms including artificial intelligence (AI)-based control strategies for optimization in real-time and predictive analytics to mitigate these issues. Primary purpose of such elementary designs as DC-DC converters and hybrid inverters to reduce total harmonic distortion (THD) and improve general power quality. System is also analyzed using MATLAB/Simulink and it has been found that all forces and moments are balanced, hence system can adjust to dynamic energy demand and climatic changes. It is an international collaborative movement that gives scope-breaking advances to power change over in fields including brilliant lattices, shrewd homes, and encouraging plants for Electric Vehicle. Numerical results demonstrate the improvements in efficiency, scalability, and cost-effectiveness.

Published in: 2026 8th International Conference on Inventive Material Science and Applications (ICIMA)

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Conference Location: Namakkal, India

U-Net Based Automated Segmentation of Retinal Blood Vessels for Diabetic Retinopathy Screening

Publisher: IEEE Cite This PDF

Prerna Mahajan ; Prabhjot Singh ; Jala Himabindhu ; Himanshu Narayan Prasad ; D. Jyothi Preshiya ; M. V. Subramanyam All Authors

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Abstract:
Diabetic retinopathy (DR) is one of the biggest causes of vision loss in the world, however, retinal image analysis can help prevent permanent vision loss by allowing DR to be detected early. Automated analysis of retinal blood vessels plays a critical role in diabetic retinopathy screening, and this paper presents a DR analysis with a focus on the U-Net frameworks and its use to segment blood vessels from wide field retinal images. Our model uses a unique and modified U-Net model that has both batch normalization (BN) and dropout regularization (DR) to address over and out of sample variability. It is hosted on a back end and dual front end offer DRIVE support. The proposed model achieved a sensitivity of 83.92 % and an AUC of 0.983, demonstrating strong discrimination between vessel and background pixels. We do find blood vessel segmentation is still optimal in thin blood vessels. We find our model is both computationally efficient and clinically trustworthy which makes our segmentation of retinal vessels optimal in automated screening for diabetic retinopathy (DR) programs.

Published in: 2026 International Conference on Signal, Systems, and Computing for Next-Gen Automation (ICSSCNA)

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Conference Location: Eluru, India

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SmartAgri-Net: Intelligent Crop Yield Prediction Using Hybrid Machine Learning Model

Publisher: IEEE Cite This PDF

Umakanth Basineni ; S. Fahimuddin ; Shaik Karimullah ; B. Venkata Sai Charan ; G.Vishnu Vardhan ; S. Swathi All Authors

Abstract
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Abstract:
The Indian economy is strongly dependent on agriculture, with Karnataka playing a significant role in food production. Accurate crop yield forecasting is essential for data-driven decision making, efficient resource utilization, and sustainable agricultural management. However, traditional statistical and standalone machine learning models often fail to capture the complex, nonlinear, and time-varying interactions among crop characteristics, soil properties, and climatic factors. To address this limitation, this paper proposes SmartAgri-Net, a hybrid intelligent ensemble framework that integrates Decision Tree (DT) for interpretability, Gated Recurrent Unit (GRU) for sequential learning, and Long Short-Term Memory (LSTM) for temporal dependency modeling. The system utilizes the Raitamitra dataset provided by the Government of Karnataka, covering major crops such as rice, maize, ragi, and groundnut with agro-climatic and soil attributes. The methodology includes structured preprocessing, normalization, exploratory data analysis, feature selection, and weighted ensemble prediction. Experimental results demonstrate improved forecasting performance over individual models using MAE, RMSE, R2, and MAPE metrics. The proposed framework supports scalable, interpretable, and intelligent decision support for precision agriculture and policy planning, with future extensions toward real-time IoT-enabled systems.

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AutoRDH-Net: A Hybrid Autoencoder–LSTM Model for MRI Brain Tumor Image Analysis

Publisher: IEEE Cite This PDF

S. Fayaz Begum ; K.Architha ; S.Charan Raj ; N.Girieswar Reddy ; P.Bhagya Lakshmi ; J.Hima Bindhu All Authors

Abstract
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Abstract:
The Magnetic Resonance Imaging (MRI) is critical in diagnosis of tumors in the brain, but due to the noise, variation of intensity, and inconsistency in structures, image degradation may hamper precise analysis. In this paper, the author presents an improved network of a deep learning-based model named AutoRDH-Net, which is used to address three aspects of improving images in MRI of the brain to be more accurate by detecting tumors and classifying them. The suggested method combines the sophisticated preprocessing methods with the AutoEncoder based feature learning and Long Short-Term Memory based sequential modelling in order to maintain the spatial continuity of the slices in MRI. Anisotropic diffusion filtering, wavelet-based enhancement, smoothing, and intensity normalization are carried out by Preprocessing in order to enhance the quality of the image. The Autoencoder is trained on reduced and denoised representations, and the LSTM transiently records sequence dependencies to preserve anatomical fidelity. Experiments performed on the BRATS dataset prove that AutoRDH-Net in terms of image reconstruction and preservation of its structure performs better than the existing methods. It has been established by quantitative analysis in form of Peak Signal-to-Noise Ratio (PSNR), Structural Similarity Index Measure (SSIM), and Mean Squared Error (MSE) that it works better and has significant advances in SSIM and decreases in reconstruction error. The examples of visual outcomes also confirm increased boundaries of the tumors and noise reduction, which was used to support the efficiency of the suggested framework towards computer-aided brain tumor diagnosis.

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Quaternary Reversible Circuit Optimization for Scalable Multiplexer and Demultiplexer

Publisher: IEEE Cite This PDF

Y. Sunanda . M. Ravi Kishore . K. Shankar . Y. Pavan Kumar Reddy . P. Syamala Devi . P. Mounika All Authors

Abstract
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Abstract:
Reversible computing is starting to establish itself as a practical solution for the energy dissipation problem in digital systems and is anticipated to be the future by pushing the limits of information loss. There are certain areas where quaternary reversible logic (multi-valued reversible logic) has an edge over irreversible binary (two-valued reversible logic) including information density, interconnect complexity, and overall scalability. We describe the design and implementation of a quaternary reversible Arithmetic Logic Unit (ALU) which contains large functional units and which operates like those in the modern ALU's; offering such functions as arithmetic, logic, memory, decoders, and multiplexers. The system will be affecting the movement of data and control of operation to scale (like a flexible control unit) and even adopts the use of a selection-line design. The proposed ALU shows some major advances in quantum cost, garbage output, and steady-state inputs in comparison to earlier designs, and yet, it can be a compatible one to design scalability for larger reversible and quantum computing systems overall. The achieved results through simulations and comparisons indicate that the proposed system is more efficient and has a significantly lower power consumption than the already proposed designs; therefore, it is reasonable to say that it could be incorporated into the future of computing technologies

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Date Added to IEEE *Xplore*: 08 June 2026
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ISBN Information:
Conference Location: Berhampur, India

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Object Detection and Classification in Images Using YOLO Algorithm

Publisher: IEEE Cite This PDF

K. Shankar , Y. Sunanda , Y. Pavan Kumar Reddy , M. Ravi Kishore , B. GangaDevi , M. Anusha All Authors

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Abstract:
Object Detection and classification are aspects that are used in computer vision, a key to making machines comprehend and interpret visual data. This project is aimed at the application of a strong and real time. Object detecting and classification system based on the YOLO algorithm. YOLO is a deep learning that is state-of-the-art framework which is characterized by high speed and sensitivity in identifying several physical objects in one picture. This is approached in the YOLO algorithm problem by splitting up the picture into a grid and at the same time bounding box prediction with corresponding class probabilities with the use of a single neural network pass. This standardized architecture plays an important role as it increases the speed of detection with competitive accuracy. The given system is trained by using pre-existing benchmark datasets like COCO and PASACAL VOC, which contain various object types and complicated scenes. Evaluation metrics including precision, recall and mAP are employed to rigorously assess the performance of the model. This work demonstrates the practical applicability of deep learning-based object detection in domains such as automated surveillance, intelligent transportation systems, robotics and smart environments, offering a foundation for further advancements in real-time visual understanding

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Date Added to IEEE *Xplore*: 08 June 2026

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A Wireless Wearable Communication System for Physically Challenged Individuals using Bluetooth Technology

Publisher: IEEE Cite This PDF

Y. Pavan Kumar Reddy . K. Shankar . M. Ravi Kishore . Y. Sunanda . A. Swapna . K. Shirisha All Authors

Abstract

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IV RESULTS AND DISCUSSION

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Abstract:
This Project focuses on the design of a wearable glove system for the detection of finger movements using IR sensors to control Home appliances. Every gesture indicates one action, which helps users with limited mobility manage simple tasks in everyday life. The glove is connected via Bluetooth to an Android application that also provides voice alerts regarding user needs during an emergency and enhances interaction between the user and caregiver. The Android app would receive commands from the microcontroller via a wireless module and, after conversion, produce the appropriate voice alert and provide text through LCD to communicate the request of the user effectively.The system also operates on low power, uses relays for safe switching, and is cost-effective. It enhances the quality of life for physically challenged persons by allowing them to lead more independently. Wireless IoT connectivity and sensor calibration can help improve the accuracy of this proposed system. Thus, it will be an effective tool in improving the quality of life for people with disabilities

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A Unified TSN and Beamforming Framework for Ultra-Low Latency Mobility in 6G mm Wave XL-MIMO Systems

Publisher: IEEE Cite This PDF

CH. Nagaraju ; C. Venkatesh ; Shaik Karimullah ; Chennuru Shaik Sana ; Uppusetty Varshitha ; Menta Venkata Naresh All Authors

Abstract
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I. Introduction
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III. PROPOSED METHODOLOGY
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Abstract:
6G wireless networks are anticipated to offer various missioncritical services with deterministic and ultra-low latency and high reliability for highly dynamic scenarios. However, meeting these conditions is extremely demanding, and such an achievement becomes more complicated in the case of mmWave XLMIMO systems where mobile basestations (BSs) are used -e.g., UAV or vehicle-mounted platforms-, causing fast channel variations and frequent link failures. In response to these issues, this paper presents a unified protocol framework that combines latency-sensitive Time Sensitive Networking (TSN) scheduling with adaptive multi-timescale beamforming for mobile 6G systems. The design includes slow-timescale user association, medium-time scale analog beamforming and fast-timescale digital beamforming with TSN-driven scheduling to provide stable BS–user and BS–BS link relationships. Latency-sensitive traffic is served by deterministic TSN mechanisms, guaranteeing strict implementations of presented approaches 235 latency and jitter bounds.Extensive system level simulations confirm the efficiency of the protocol in reducing TSN deadline violations and jitter while maintaining high throughput in mobile base-station and varying traffic priority scenarios. It is shown that the system has strong scalability in the dense user environment and large robustness for mobility-induced outages. In summary, the proposed framework realizes a realistic path to a reliable and adaptable 6G mmW network that can support industrial automation, autonomous mobility, disaster-response communication with deterministic performance guarantees

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Design and Development of a Smart Aquaponics System Using IoT

Publisher: IEEE Cite This PDF

C. Venkatesh ; Ambarapu Rihana ; S. Pushpak ; L. Siva Yamini ; Eddala Nithin ; Siddavatam Reddy Lakshmi All Authors

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Abstract:
Modern agriculture is faced with a significant challenge of food security, scarcity of resources and climate variability and requires innovative solutions. Conventional farming that revolves around use of soil encounters soil erosion, overuse of water and is not scalable. To solve these problems, this paper introduces the design of an IoT-based intelligent precision farming system in soilless cultivation, with aquaponics as the basis of cultivation. Aquaponics is a combination of fish and hydroponic vegetable production that ensures a closed-loop ecosystem that reduces resource waste and increases sustainability. The suggested system will use advanced sensors and IoT devices to maintain the constant monitoring of the critical environmental parameters like quality of water, nutrients, temperature, humidity, and $\mathbf{pH}$. The collected data is analyzed with the help of smart algorithms to provide realtime decision-making, automated actuator control, and predictive system health control. The intelligent environmental practice ensures the best development atmosphere of plants as well as aquatic organisms with the ultimate outcome of maximized yield, minimized energy usage, and decreased reliance on chemical applications. This would not only promote the productivity, but it would also promote the sustainability of urban farming, which is an alternative approach to conventional agriculture, being scaled and environmentally friendly. With this aquaponics USB camera, it is possible to detect the diseases in real-time. The proposed design represents how a combination of IoT, precision farming, and aquaponics may revolutionize the food production of even resource-restrained contexts.

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NSST-Based Multi-Modal Medical Image Fusion With LiqDRY-Net Architecture

Publisher: IEEE Cite This PDF

Fahimuddin Shaik ; Peddapullaiahgari Hariobulesu ; C.H. NagaRaju ; Charitha Kummetha ; Gopanapalli Chidvilas ; Kovuru Aswini All Authors

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Abstract:
A Liquid Rybak Neural Network LiqDRYNN or dual channel multimodal image fusion is used in this study as LiqDRY-Net nonsubsampled shearlet transform (NSST) space, is suggested to be used to do Liquid Fusion. The framework takes benefit of the generality of the liquid neural dynamics based on a biologically analogous Rybak Neural Network to combine complementary data between MRI, PET and SPECT data. Under the specified approach, high-pass subimages are fused with LiqDRYNN and low-pass subimages are fused with the pixel-force operator which preserves regional energy and structural regularity. A broad evaluation of different datasets, including the Alzheimer disease, glioma and encephalitis, demonstrated that LiqDRY-Net was betterthan standard fusion techniques both qualitatively and. quantitative visualization. The results confirmed that LiqDRY-Net created diagnostically good fused images, which enhanced clinical decision-making.LiqDRY-Net, which is a new method of image fusion of multimodal fusion, is a combination of the. strengths of Liquid Rybak Neural Networks (LiqDRYNN) using nonsubsampled shearlet transform (NSST) to improve medical imaging services. This new model uses the flexibility of liquid neural dynamics and the biological similarity of the Rybak Neural networks to efficiently combine complementary information of MRI, PET, and SPECT modalities. LiqDRYNN is applied to high-pass subimages to optimize the fusionprocess of the subimages, but low-pass subimages are not optimized. The fusion of subimages is done with a pixel-force operator that maintains the local energy and integrity.LiqDRY-Net was properly tested on the basis of various datasets that involve Alzheimer cases of disease, glioma and encephalitis. The findings showed that it is better than the traditional fusion procedures. both qualitative and quantitative tests. LiqDRY-Net has created diagnostically sound fused images. demonstrated a strong potential to enhance the clinical decision-making proc...

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Published in: 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)

Date of Conference: 28-29 January 2026

DOI: 10.1109/ICoECIT68303.2026.11497984

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Conference Location: Hyderabad, India

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LiteVis-Net: A VGG19-Based Deep Learning Approach for Multi-Focus Image Fusion in Shoreline Analysis

Publisher: IEEE Cite This PDF

Peddapullaiahgari Hanobulesu . Ch.Nagaraju . R.Madan Mohan . Valipireddy Mahitha . Kuruba Manogna . Reddipaka Kiran Kumar . All Authors

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Abstract:
The analysis of shorelines needs an exact demarcation of land-water boundaries of coastal imagery that is usually problematic due to varying levels of focus, illumination, and structural ambiguities. The article proposes a new deep learning architecture LiteVis-Net, a VGG19-based solution with the high-precision shoreline retrieval by using multi-focus image fusion. In comparison with the traditional methods that have difficulties with the computational complexity or the ridges capacity, LiteVis-Net utilizes the semantic expressiveness of VGG19 with structural improvement methods to attain high-quality shoreline delineation in diverse imaging conditions. The described pipeline consists of the elements of grayscale conversion, normalization, dual-branch VGG19 encoding, focus probability maps generation, adaptive thresholding, edge-aware guided filtering, and pixel-wise blending. Experimental tests confirm LiteVis-Net as being better in edge preservation, sharpness of boundary, and consistency of details than the currently used fusion techniques, making it effective in the monitoring of the coastal region and the management of the shoreline.

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Energy-Efficient Resource Allocation in Cognitive Radio Networks Using Self-Adaptive Harris Hawks Optimization Algorithm

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Wireless Edge Computing in Internet of Everything

(ICWCIE 2024)

M. Sugashini, M. Ravikumar, S. Prabu, K. L. Hemalatha & Tejaswi Murarrysetty

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1467))

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Abstract

Cognitive radio network (CRN) is a potential technology to determine resource inadequacy in wireless networks. However, when changes in resource availability in CRN occur, the existing approaches for resource allocation resume optimizing resources without utilizing previous data. To solve this problem, a self-adaptive-Harris Hawks optimization (SA-HHO) algorithm is proposed for resource allocation in CRN efficiently. Initially, in the system model, the power consumption, spectrum channels in CRN, signal interference to noise ratio (SINR), and energy efficiency for resource allocation are estimated. After that, the proposed SA-HHO optimization algorithm is used for resource allocation by updating the position of hawks with a self-adaptive strategy, which prevents the model from falling into local optima. The experimental analysis indicates promising results for energy efficient resource allocation in CRN with interference, throughput and energy efficiency of in base station 10, 15, 20, and 25 are 21.2, 23.0, 24.7, and 20.4 J which is lesser than other existing resource allocation methods like flower pollination optimizer (FPO), modified non-domination sorted genetic algorithm (MNSGA), and block coordinated descent (BCD).

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Bidirectional Long Short-Term Memory with Recurrent Neural Network-Based Spectrum Sensing Technique in Cognitive Radio System

| Conference paper | First Online: 01 May 2026

| pp 351–360 | Cite this conference paper



Wireless Edge Computing in Internet of Everything

(ICWCIE 2024)

R. Rana Veer Samara Sihman Bharattej, Rathod Maheshwar, Piyush Kumar Pareek, Anisetti Shiva Rama Krishna & Bodagala Lakshmi Devi

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1467))

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Abstract

The cognitive radio (CR) technology seeks to improve the harness of the radio spectrum with spectrum sensing as one of the important parts. But, as mentioned earlier, it is quite difficult to achieve accurate spectrum sensing because system performance is affected by various enabling factors. Artificial intelligence (AI) and deep learning (DL) allow new spectrum sensing techniques to be formulated based on new possibilities. In this paper, a model based on the connection between the models of recurrent neural network (RNN) and bidirectional long short-term memory (BILSTM) has been proposed for spectrum sensing. This approach uses the

EffiBaSo-Net: An Optimized Deep Learning Model for Lung Cancer Detection and Classification from LDCT Scans Using EfficientNet and Battlefield Optimization Algorithm

Publisher: IEEE

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Fahimuddin Shaik ; Peddapullaiahgari Haribabulesu ; Singam Kiranmai ; Bommisetty Sangeetha ; Sanganaboyana Ranjith Kumar ; Shaik Nawaz All Authors

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Abstract:
Early diagnosis and accurate diagnosis of lung cancer.significantly enhances the survival rates by facilitating prompt intervention. The project has offered EffiBaSo-Net a hybrid end-to-end learners used in the accurate detection and diagnosis of lung cancer through Low-Dose Computed Tomography (LDCT) data. The model involves EfficientNet speed in the fast extraction of features, the Battlefield.Optimization Algorithm The capability of Optimization Algorithm to explore hyperparameter optimization and feature selection of| human|>hyperparameter optimization and feature selection, and the Decision making capability of softmax classifier. EfficientNet extracts are characteristics which distinguish LDCT images among others. another at the same time maintaining the cost of doing so at as little as possible. Tactical warfare-based algorithm BfOA mimics exchanges in the field of battle when two rivals squads perfect their strategy. This improves classification performance. This competitive approach ensures that the very best of features is selected and the best hyperparameters are controlled and it also prevents local minima as well happening. Post-processing processes are necessary to ensure that the framework can be used in practice with actual clinical applications built in. These involve the refinement of the region of the lesion specify the tumor, reducing the number of false positives to increase the reliability of the diagnosis, and calibration of the has a probability of providing interpretable confidence scores. The steps shown make sure that there is a safe prediction made by combining them can be put into practice. The final Softmax layer puts lung cancer to the right stages or types, which provides the doctors with good data in the diagnosis.Experimental tests show that EffiBaSo-Net is very accurate, sensitive, and specific, while still being able to run quickly. EffiBaSo-Net provides a scalable and resilient approach for computer-assisted lung cancer diagnosis...

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A Comprehensive Review of Deep Learning and Iotintegrated Medical Imaging Systems for Pancreatic Cancer Detection

Publisher: IEEE Cite This PDF

Kammari Rama Krishna ; C. Venkatesh All Authors

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IV. Task Taxonomy in Pancreatic Imaging AI

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Abstract:
Pancreatic cancer is still a problem that kills a lot of people with cancer all around the world. It's hard to know what's wrong because it's a disorder and the symptoms don't show up immediately away. Doctors are using artificial intelligence and the Internet of Things together more and more to assist them figure out whether someone has pancreatic cancer. New learning technologies are particularly promising since they can help locate lesions, figure out what kind of tumor it is, find the areas that are impacted, and figure out how far the cancer has spread using CT scans, ultrasound, or EUS devices. The assessment looks at more than 85 research studies and shows how the Internet of objects (IoT) has made it easier to find out what's wrong with objects. The report talks about what people are doing well right now and what needs more research. These are some possible study directions and the best techniques to get photos ready for deep learning models, such as Transformer models and U-Net versions. There is also a well-organized list of deep learning tasks, such as detection, segmentation, staging, prognosis, and subtype classification. It also brings up problems that keep coming up, like dataset variability, imaging differences, and noise in the annotations.

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ISBN Information:

Conference Location: Tirupati, India

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Multi-Disease MRI Analysis using DenseNet based CNN and U-Net Segmentation to detect brain tumor and Alzheimer diseases

Publisher: IEEE Cite This PDF

C. Venkatesh ; L.Siva Yamini ; Naramreddy Sreenath Reddy ; Matam Shanmukha Murthy ; Chimala Venkata Govardan Yadav ; Pindiboyana Suribabu

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Abstract:
Chronic and life-threatening illnesses like brain tumors and Alzheimer disease have been a major challenge to the current healthcare systems. The conditions would need an early diagnosis and continuous observing to minimize mortality and enhance patient outcomes. Conventional diagnostic processes can often be manual, time consuming and can have a low accuracy and inter-observer consistency.Deep learning models in this work are used in the software level in medical image classification with Convolutional Neural Networks (CNNs) and DenseNet-201 and U-Net-based medical image segmentation. The system suggested is able to automatically objectify and identify critical illnesses, namely brain tumors and Alzheimer disease, on the basis of MRI scans, with cancer type as glioma, meningioma, pituitary, and no-tumor, and Alzheimer stages like non-demented, very mildly demented, mildly demented, and moderately demented. The proposed framework will address chronic neurodegenerative and oncological diseases by leveraging transfer-learning-based feature extraction methods and providing robust segmentation that will contribute to creating a more reliable methodology in diagnostic situations and clinical decision-making.

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Deep Learning-Based ECG Signal Quality Determination with Optimized CNN Hyperparameters

Publisher: IEEE Cite This PDF

K. Naga Sankar Reddy ; S.Qudaya Coumar ; V. Nagendra ; Y Sravani ; K. Sangeetha ; Peddapullaiahgari Hariobulesu All Authors

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Abstract:
Electrocardiogram (ECG) signal quality assessment (SQA) is crucial for accurate cardiac diagnosis and monitoring. This study proposes a deep learning-based approach using a convolutional neural network (CNN) with optimized hyperparameters to evaluate ECG signal quality. The preprocessing phase involves resampling, segmentation, filtering, and normalization to enhance signal clarity. A comprehensive labelled dataset, comprising clean and corrupted ECG segments, is created to train and evaluate the CNN model. Various activation functions, including ReLU, Leaky ReLU, and ELU, are tested to determine the optimal model configuration. Performance metrics, such as accuracy, sensitivity, and specificity, are used to assess the model's reliability across multiple datasets, including PhysioNet/Computing in Cardiology Challenge 2011 (PCCC2011) and INCART. Experimental results demonstrate the model's high classification accuracy and robustness in distinguishing clean from noisy ECG signals. This automated quality assessment system is suitable for integration into real-time monitoring devices and telemedicine platforms, improving diagnostic accuracy and reducing the need for manual review.

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PulmoXLM-Net: A Hybrid Deep Liquid Learning Framework for Automated Lung Cancer Detection and Classification

Publisher: IEEE Cite This PDF

C. Avinash Reddy ; D. Ganga Shivani ; B. Lakshmi Devi ; M. Architha ; G. Dharma Teja ; G. Thirumalaiah All Authors

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Abstract:
Lung cancer is a deadly cancer in the world and therefore it is very much important that early and precise detection is done. PulmoXLM-Net is a two step lung cancer detector and classifier research that utilizes Xception, Liquid State Machines (LSMs) and Multi-Class SVM (MSVM) in this paper. In the first stage, preprocessing of CT images in the LIDC-IDRI dataset is done through median filtering and morphological operations and active contour segmentation. Refinement of tumor regions is performed by binary conversion, circle detection and area estimation. Xception network finds out the spatial and texture features of the segmented regions at the second stage that are dynamically added by LSMs to detect sequential patterns then classified into Adenocarcinoma, Large Cell Carcinoma, Squamous Cell Carcinoma and Normal through MSVM. The performance is determined with the help of accuracy, sensitivity, specificity, and precision that would demonstrate the effective segmentation and proper classification. PulmoXLM-Net is a decision support system that is good in lung cancer screening.

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Abstract:
The field of approximate computing is rapidly evolving, particularly in neural network applications that can tolerate some error. I'm presenting a novel multiplier design in this letter. To reduce errors in each partial product column, it employs an algorithm that selects the best approximate compressors from both old and new sets. In order to speed up the MFA, I used pipelining instead of the typical full adders. A simple error-correcting module is built into the design to correct any errors resulting from this approximation. When I tested this 8-bit multiplier, it outperformed other recent designs and exact multipliers in terms of power consumption and power-delay product (PDP). Additionally, I tested it on image processing and neural network tasks, and it performed well, demonstrating its effectiveness and dependability.

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Brain Tumor Multi-Classification Using oncoM2F-Net: A mobilenetV2 and Nature-Inspired Optimization Approach

Publisher: IEEE Cite This PDF

Tejaswi MurarrySetty ; Bodagala Lakshmi Devi ; Pola Radhika ; Boya Manikumar ; Mopuri Pavan Kumar ; Pappur Shaguptha All Authors

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Abstract:
Appropriate classification and correct diagnosis of brain tumours is essential in order to diagnose them early enough and to plan on how to treat them. OncoM2F-Net is the deep learning-based model, which is suggested to identify and classify the various types of the brain tumors with a higher efficiency and accuracy through MRI images. This model will consist of MobileNetV2 as an effective feature extraction and lightweight processing algorithm and the Masterpiece Optimization Algorithm (MOA) to enhance the use of the models through the search of the ideal feature representation systematically followed by evaluation and refinement. MOA is based on natural nesting of Japanese Male Puffer Fishes to compare the exploration and exploitation strategy on a balanced level to prevent the propensity of the model to reach suboptimal solutions. The extracted features are passed through a fully connected and clustered into various classes of tumors such as glioma, meningioma and pituitary tumor by a SoftMax classifier. The analysis of the experiment demonstrates that OncoM2F-Net is more reliable, accurate, and computationally less efficient in comparison to the traditional ones, which is why it could be applied to assist clinicians in the credible identification of brain tumors and their classification.

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Intelligent Shopping Carts: IoT Innovation For Supermarkets

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J. Chinna Babu ; Shaik Karimullah ; P. Chandra Reddy ; B. Hari Babu ; C. Madana Kumar Reddy ; Fahimuddin Shaik ; All Authors

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Abstract:
In today's rapidly advancing technological era, simplifying daily tasks is a growing priority. The Smart Shopping Trolley aims to streamline the shopping experience by minimizing time and effort. Utilizing the Internet of Things (IoT), this system enables auto-tracking and billing, eliminating the need for customers to stand in queues. RFID sensors integrated into the trolley scan products directly within the cart, automatically uploading data to a server. Arduino Uno microcontrollers facilitate fast data processing and efficient connectivity, supporting real-time inventory management. The trolley's autonomous movement is achieved using DC motors controlled by custom driver circuits. IR sensors guide directional movement, allowing the cart to follow the customer seamlessly. This innovation significantly enhances convenience and operational efficiency in supermarkets. Smart Trolleys exemplify how advanced technology can transform traditional retail practices, benefiting both businesses and consumers through automation, accuracy, and ease of use, thus redefining the shopping experience in modern retail environments.

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Machine Learning-Based Framework for Enhancing Security and Performance of Beyond 5G Wireless Sensor Networks

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K. Riyazuddin ; Fayaz Basha ; P. Pavitra Reddy ; C. Shekshavali ; R. Radha ; S. Sameer All Authors

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Abstract:
Wireless Sensor Networks (WSNs) are integral components of smart cities, healthcare, industrial systems, and defense applications. With the emergence of Beyond 5G communication, these networks are expected to provide reliable, energy-efficient, and low-latency connectivity. However, their distributed nature and limited computing resources make them prone to various attacks, including blackhole, sinkhole, Sybil, and jamming. This paper presents a comprehensive simulation-based analysis of WSNs in a Beyond 5G environment using Python. The study evaluates network performance under normal and attack conditions through metrics such as throughput, packet delivery ratio, latency, trust, and energy consumption. A machine learning-based intrusion detection system using the Random Forest algorithm is implemented. The results demonstrate enhanced network security and efficiency, supporting the development of secure and intelligent IoT infrastructures.

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Paper Tit Revolutionizing Vehicle Manoeuvrability: A Comprehensive Study on Innovative Electronics-Enabled Four-Wheel Steering Systems For Zero Turning Radius

Publisher: IEEE Cite This PDF

B. Venkatesh ; Y Suresh ; J.Chinna Babu ; P. Chandra Reddy ; B. Hari Babu ; Shaik Karimullah All Authors

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Abstract:
This article aimed to build and install a revolutionary steer-by-wire four-wheel steering (4WS) system to improve the turning capabilities of vehicles operating in extremely confined environments. Conventional steering systems usually function poorly in these environments, demanding innovative solutions. This study also uses numerical simulations, electronics and mechanical design, and control system theory to undertake a detailed evaluation of various four-wheel steering setups. A PID-based electronics control system was developed and tested in MATLAB to study the dynamic steering response to ensure system stability and responsiveness over a wide range of operating conditions. Also, this work provides the structural and electronics performance of the steering linkage information under applied stress. It shows a significant improvement in the turning radius and stability. The proposed technology offers a realistic solution for improving manoeuvrability, safety, and energy economy in various driving circumstances while aligning with current automobile and electronics trends.

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Abstract:
Quantum Key Distribution (QKD) is a pioneering development in secure communication, an information-theoretic secure communications protocol that is founded on quantum mechanics. However, the effectiveness of such systems which safeguard the classical communication mediums against interception and impersonation depends on the strength of the authentication mechanisms that are used in the QKD systems. The proposed study is Hybrid Quantum Authentication Framework that is based on a combination of Wegman-Carter authentication, Quantum Digital Signature (QDS), and Post-quantum Cryptography (PQC) to counter new threats of Man-in-the-Middle (MITM), replay, and key exhaustion attacks. Based on the Quantum Encryption Dataset retrieved on the Kaggle platform, the framework was experimentally tested following the dataset augmentation to incorporate the authentication parameters and simulated attack labels. The results of the experiment prove that the hybrid model proposed can attain an authentication accuracy of 98.6%, which is significantly higher than that of standalone methods, MISM and replay attack detection rates of 99 and 98, respectively. The architecture lowers the key consumption by more than 40 percent, keeps the latency at 1.28 ms and the throughput at 92 percent, proving the scalability and computational efficiency of the architecture. Comparable performance and scalability studies also indicate that the model remains highly reliable as the size of the network increases with little growth in the latency. Generally, the suggested hybrid solution is robust, flexible and effective authentication of QKD networks and a viable solution in the next-generation quantum-safe communications infrastructure that can withstand classical and quantum attackers.

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A Systematic Analysis and Optimization of Deep Learning Models for Prostate Cancer detection and classification on medical imagery

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Abstract:
the purpose of this study is to report on prostate cancer diagnosis and treatment using deep learning (DL). As technology advances, computer vision is more incorporated into our everyday lives. These developments in processing power have made it possible for larger datasets to train more intricate and sophisticated DL models. These technologies have proven useful to urologists in their work, and numerous models have been created to support the detection, management, and surgical procedures of prostate cancer. The technologies and advanced models used to treat prostate cancer will be systematically reviewed and summarized in this review. Research on deep learning applications should increase as a result of the ongoing advancements in DL models. Model optimization should be the main goal until the models are prepared for clinical use. Future studies should concentrate on creating models that can learn from encrypted photographs in order to provide greater data accessibility and sharing. To improve the detection of significant PCa and the selection of patients eligible for targeted biopsies, current technology in MRI has promoted a formal evaluation and an increased prescription by doctors. Its indication in patients who have never had a biopsy is still debatable, though. The combined use of the above tools will help patients as well as healthcare providers to identify the most appropriate treatment strategy for this very variable disease.

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BayesLSTM-FCTN: A Bayesian LSTM-Enhanced Tensor Network for High-Resolution Hyperspectral Image Fusion

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K.Chandrahasa Reddy ; Shaik Vajiya ; Thummala Perraih Gari Supriya ; Mopuri Sujeen Kumar ; Siripireddy Vema Prathip Reddy ; G.Thirumalaiah G. Thirumalaiah All Authors

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Abstract:
Hyperspectral imaging offers rich spectral–spatial information but often suffers from low spatial resolution and noise due to sensor limitations. To address these challenges, this work proposes BayesLSTM-FCTN, a Bayesian LSTM-Enhanced Fully-Connected Tensor Network designed for high-resolution and uncertainty-aware hyperspectral image fusion. The framework begins by simulating realistic degradations—such as spectral–spatial down-sampling and noise addition—to train under true sensor conditions. The Fully-Connected Tensor Network (FCTN) efficiently captures high-order spatial–spectral correlations, while the Long Short-Term Memory (LSTM) module models sequential dependencies across spectral bands. By embedding these within a variational Bayesian inference scheme, the model not only reconstructs high-fidelity hyperspectral images but also quantifies uncertainty in the predictions. Experimental evaluations using standard metrics—PSNR, RMSE, ERGAS, SAM, SSIM, and UIQI—demonstrate that BayesLSTM-FCTN achieves competitive accuracy and robustness compared to conventional fusion techniques. Beyond image reconstruction, the framework shows promise in practical applications such as land-cover mapping, environmental monitoring, precision agriculture, and urban analysis, establishing a reliable foundation for uncertainty-aware hyperspectral image enhancement.

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Design and Implementation of Frequency Reconfigurable Microstrip Patch Antenna for Wireless Power Transfer Applications

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Abstract:
With the increasing need for battery-free and power-efficient IoT devices, RF-based Wireless Power Transfer (WPT) is emerging as a practical solution. This work features a compact frequency-reconfigurable microstrip patch antenna coupled with a tri-turn square-shaped complementary spiral resonator (3-SCSR), specifically developed for robust WPT applications. Constructed on a 50 mm × 50 mm × 1.6 mm FR-4 substrate, the design achieves notable size reduction by embedding the 3-SCSR in the ground plane. Three PIN diodes facilitate versatile operating modes—single, dual, and tri-band configurations—over a broad span from 0.205 GHz to 1.7 GHz, enabling use in VHF, ISM, GSM, UHF, and L-band settings. The prototype exhibits a peak gain of 2.84 dBi and omnidirectional radiation suitable for extensive coverage. For efficient energy conversion, a voltage-doubler rectifier using low-barrier Schottky diodes is optimized at 1.5 GHz, delivering 50% RF-to-DC conversion efficiency at –10 dBm input. Simulation studies in CST and MATLAB confirm antenna performance and energy harvesting capability. This low-cost, miniaturized design offers a promising solution for long-life IoT nodes in remote or hard-to-maintain locations.

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An Efficient Emotion Recognition via Landmark Graphs and Multi-Head Attention

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B. Lakshmi Devi , M. Venkata Dasu All Authors

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III. PROPOSED METHOD
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Abstract:
Facial Emotion Recognition (FER) has rapidly evolved with the rise of deep learning, yet challenges persist in achieving robust, real-time, and generalizable emotion detection under unconstrained conditions. This paper introduces FAT-Net-Lite (Facial-Attention-Transformer Network – Lite), an efficient hybrid architecture that integrates both video frame-based image features and landmark-based structural information for accurate emotion recognition. The model employs EfficientNetV2-Tiny coupled with a Convolutional Block Attention Module (CBAM) to enhance discriminative visual feature extraction, while a Landmark-Based Adaptive Graph Convolutional Network (LBAGCN) captures geometric dependencies among 68 facial landmarks. The fused representation is processed through a Transformer encoder to model long-range spatial relations and contextual dependencies. To further improve recognition of underrepresented emotions, auxiliary classifier heads are introduced for Disgust, Fear, and Neutral categories. The proposed approach achieves 98.48% accuracy, outperforming recent state-of-the-art FER models including DALDL, ESTM, and ViTCN, while maintaining low computational overhead. FAT-Net-Lite's lightweight design and attention-guided fusion make it well-suited for real-time deployment in intelligent human–machine interfaces, healthcare monitoring, and emotion-aware systems.

Published in: 2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)

Date of Conference: 05-07 November 2025
DOI: 10.1109/ICECA66444.2025.11383034
Date Added to IEEE *Xplore*: 13 February 2026
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Cost-Effective Voltage Stability Enhancement via HEES-based Interline DC Flexible Voltage Restorer

Publisher: IEEE Cite This PDF

Kuruva Raju ; K. Kiran ; K. Lokesh ; V Mahesh Kumar Reddy ; R. Senthil Kumar ; K. M. D. Rajesh Babu All Authors

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Abstract:
The stability of DC distribution systems is often compromised by voltage sag, swell, and imbalance caused by renewable intermittency and nonlinear loads. Traditional battery storage systems, though cost-effective, suffer from limited dynamic response, while high-conducting electromagnetic energy storage (HEES) offers millisecond-level compensation at high cost. To address this trade-off, a novel Interline DC Flexible Voltage Restorer (IFVR) is proposed, where a single HEES module is shared across multiple distribution feeders. The novelty lies in its priority-based switching strategy and multilevel inverter topology, which allow rapid injection/absorption of compensating current with reduced hardware. The proposed design integrates HEES with line-selector and mode-selector switches to dynamically restore interline voltages. Simulation studies were performed in MATLAB/Simulink with load resistance variations from 0.4 Ω to 10.1 Ω under sag (180 V), swell (260 V), and normal (230 V) operating conditions. Results demonstrate a transient recovery time below 1 s, voltage regulation within ±2%, and harmonic distortion below 3%. Compared with conventional DVR-based methods, the IFVR achieves a 25% reduction in storage capacity requirements and 18% improvement in response speed. This makes the configuration highly suitable for renewable microgrids, data centers, and EV charging systems, ensuring cost-efficient, scalable, and reliable DC voltage stabilization.

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Conference Location: Coimbatore, India

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Solar-Powered Isolated Bidirectional DC–AC Converter for Microgrid and Distributed Energy Systems

Publisher: IEEE Cite This PDF

Y. Hari Krishna ; K. Kiran ; A. Venkata Ramana ; D Arun Prasad ; R. Senthil Kumar ; K. M. D. Rajesh Babu All Authors

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Abstract:
The reliable operation of microgrids and distributed energy systems requires efficient bidirectional conversion between DC and AC domains under varying voltage levels. Conventional converters suffer from limited efficiency and restricted voltage conversion capability when interfacing with solar photovoltaic sources. To address limitation, an isolated bidirectional DC–AC converter has been developed, incorporating a high-frequency transformer with a turns ratio of 5:25, resonance inductance of 46 μH, and mutual inductance of 190 μH. The proposed design enables wide voltage conversion with both step-up and step-down operation, governed by modulation indices formulated through resonant tank analysis. Hardware validation demonstrates stable operation with zero-voltage switching (ZVS) at full load, significantly reducing switching losses. Experimental results indicate that in AC–DC mode, the system achieves a peak efficiency of 95.2% at a rated power of 800 W, while in DC–AC mode, efficiency remains above 93% across the operating range. Harmonic analysis confirms that total harmonic distortion (THD) is maintained below 3.5% in AC–DC conversion and 4.2% in DC–AC conversion, ensuring compliance with grid standards. These results establish the proposed isolated bidirectional converter as a robust and cost-effective solution for renewable-powered systems, offering high efficiency, reliable voltage regulation, and suitability for future smart grid and electric vehicle charging applications.

Published in: 2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)

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Rajendra Prasad Somineni ; Kishore Pinniti ; Priyanka Brahmaiah ; J Chinna Babu All Authors

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Abstract:
This paper discusses different types of comparator designs and analysis using 180nm technology. It explains the detailed design and parameters calculation like Propagation Delay, Gain, Input Resolution, Slew Rate. Two different comparators were designed one to increase slew rate and other for higher gain

Published in: 2025 Third International Conference on Emerging Applications of Material Science and Technology (ICEAMST)

Date of Conference: 03-05 November 2025

DOI: 10.1109/ICEAMST67459.2025.11335594

Date Added to IEEE *Xplore*: 21 January 2026

Publisher: IEEE

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VLSI Implementation of Edge-Adaptive Temporal-Spatial Neural Engine (EATNE) for Ultra-Low-Power ECG Arrhythmia Detection

Publisher: IEEE Cite This PDF

P. Syamala Devi ; K. Hima Bindu ; B. Hussen Basha ; S. Mohan Venkat Kailash ; P. Madhu Sudhan Reddy ; G. Thirumalaiah All Authors

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Abstract

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Abstract:
Wearable healthcare devices can be useful in cardiac arrhythmia detection, but it demands extremely low power consumption and real-time functionality. We present in this work an Edge-Adaptive Temporal-Spatial Neural Engine (EATNE), a work that is optimized to be implemented on VLSI. The given model will record both spatial properties of ECG waveforms and temporal dynamics between each heartbeat in order to enhance detection rates. In order to conserve energy, EATNE has optimized its computation depending on the complexity of the signal and relies on lightweight blocks of neural networks optimized on hardware. The design is mapped to a VLSI architecture that is memory-efficient and power-saving that can be applied to wearable devices. When performed on standard ECG datasets, experimental assessment, EATNE can be found to be reliable in arrhythmia detection, and much less power and area are required than typical deep-learning methods, suggesting the tool as a strong candidate in future portable health monitors.

Published in: 2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)

Date of Conference: 17-19 December 2025

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Conference Location: Salem, India

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Hybrid DeepHNeph-Net:Integrating Efficientnet and Bat Optimization Algorithm for Kidney Stone Severity Classification

Publisher: IEEE Cite This PDF

M. Ravi Kishore ; Y.Pavan Kumar Reddy ; K. Priyanka ; S.R Sai Deepthi ; K. Sasikanth ; G. Thirumalaiah All Authors

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1. Introduction
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Abstract:
DeepNeph-Net is a hybrid deep learning network that is advanced to detect kidney stones using medical images. This framework integrates Efficient Net, Bat Optimization Algorithm (BOA) and Deep Convolutional Neural Network (DCNN) to provide accurate and automatic detection. The process begins with image acquisition and proceeds through preprocessing involving gray scale conversion, histogram equalization, and median filtering which is employed to enhance the image quality and remove noise. Such steps ensure that the images are improved and more suitable in the sense of further processing. For a good division of potential regions of kidney stones, the system employs the Fuzzy C-Means (FCM) clustering algorithm that will help in deciding the most relevant regions to extract features. Once the segmentation of the region of interest is done, there are various features that are extracted for classifying the regions such as statistical, texture and higher-order characteristics. Complete feature extraction is done by applying Efficient Net and the BOA assists in feature selection of the most important features and further adjusts the network parameters. The classification unit is developed on a DCNN classifier which classifies kidney stones into three severity levels; Benign, Medium-level and Severe.

Published in: 2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)

Date of Conference: 17-19 December 2025

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Date Added to IEEE *Xplore*: 20 January 2026

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Print on Demand(PoD) ISBN:979-8-3315-6588-6

Conference Location: Salem, India

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A Hybrid Trust-Aware Protocol Integrating LSTM and Griffon Vultures Optimization with Leach for Enhanced WSN Lifetime

Publisher: IEEE Cite This PDF

K. Shankar ; K. Rajmohan ; R. Rajeswari ; Y. Sunanda ; S. Gnanamurugan ; Y. Pavan Kumar Reddy All Authors

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Abstract:
In contemporary Wireless Sensor Networks (WSNs), secure communication, energy efficiency and long network lifetime are still essential problems. This research introduces OptiLGL-Net, a routing protocol that combines Long Short-Term Memory (LSTM) for behaviour pattern identification, Griffon Vulture Foraging Optimization (GVFO) for cluster head selection for optimal performance and LEACH for hierarchical energy-efficient communication. The design of OptiLGL-Net involves a multilayer trust model that assesses direct, indirect and energy-based trust values between sensor nodes. The LSTM model predicts trust anomalies after being trained by learning patterns of node behaviour over time and interaction history. For improving the efficiency of cluster formation, GVFO, which is a newly proposed metaheuristic that draws inspiration from scavenging behaviour of griffon vultures, is used. GVFO employs methods like group foraging, following, near-carcass scouting and independent search to adjust an optimal tradeoff between exploration and exploitation in selecting cluster heads. The new approach is validated by thorough GOOGLE COLAB simulations. Performance results show that OptiLGL -Net delivers considerably better packet delivery ratio, residual energy, network lifetime and secure routing accuracy compared with the traditional LEACH and existing trustaware models. The addition of GVFO increases resilience to malicious nodes and increases the adaptability of the network under dynamic scenarios. This renders OptiLGL-Net as a viable protocol for real-time, secure and energy-efficient WSN installations in applications like environmental monitoring, battlefield surveillance and IoT health systems.

Published in: 2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)

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Date Added to IEEE *Xplore*: 20 January 2026

Publisher: IEEE

ISBN Information:

Conference Location: Salem, India

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Performance Analysis of Energy-Efficient URLLC Systems with Nonlinear Energy Harvesting and Finite Blocklength Transmission

Publisher: IEEE Cite This PDF

CH. Nagaraju ; C. Venkatesh ; A. Praveena ; G. Nithya Santhoshini ; T. Prasanth Kumar ; K. Rambabu **All Authors**

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IV. Results and Discussion

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Abstract:
Ultra-Reliable Low-Latency Communication (URLLC) is a crucial element of next-generation IoT networks. It enables mission-critical applications where reliability and speed are essential, such as autonomous driving, factory automation, and healthcare monitoring. The usage of brief packets is the primary source of URLLC's challenges. Although short packets speed up transmission, there is a greater likelihood of errors. However, a large number of Internet of Things devices are energy-constrained and depend on radio frequency (RF) signal energy harvesting. These energy harvesting circuits are nonlinear in practice, which means that their efficiency increases only until a certain point before reaching saturation. This paper employs a three-step methodology to overcome these problems. To reflect actual behavior under various RF power levels, the nonlinear energy harvesting model is first examined. The best transmission time and packet repetitions are then determined using an energy management framework designed for devices that use either full channel information (F-CSI) or merely average channel information (A-CSI). Lastly, the behavior of short packets in terms of dependability and error probability is examined using finite blocklength theory. In comparison to traditional Shannon theory, the results demonstrate that small packets suffer from finite blocklength penalties and that nonlinear energy harvesting significantly impacts system performance. These observations offer helpful advice for creating dependable and energy-efficient URLLC systems for actual Internet of Things applications.

Published in: 2025 4th International Conference on Applied Artificial Intelligence and Computing (ICAAIC)

Date of Conference: 17-19 December 2025

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Date Added to IEEE *Xplore*: 20 January 2026

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Y. Pavan Kumar Reddy, Y. Sunanda, M. Ravikishore & K. Shankar

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Abstract

People these days are having problems. The owner cannot always deliver the keys to the person who wants to drive the vehicle if they are far away from it. Thus, with the use of an OTP, the possessor of the intelligent vehicle can grant access to the individual from anywhere. The One-Time Password technology is integrated with vehicle abilities via the OTP-based system outlined in this solution, providing a holistic approach to improve security and user experience. The technology makes sure that only individuals with permission can start the automobile by needing a distinct OTP for ignition. This feature dramatically lowers unwanted access by acting as a strong anti-theft safeguard. In

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Abstract

The Universal Asynchronous Receiver Transmitter (UART) is a serial communication protocol that functions as an integrated circuit, enabling asynchronous data transmission and reception through a computer's serial port. It handles data in bytes, transmitting individual bits in sequence, which are then reconstructed into complete bytes at the receiving end. This study focuses on the design and implementation of UART for RF-based modules using various FPGA technologies, which include components such as a transmitter, receiver, and baud rate generator. The UART protocol is increasingly favored in RF-microcontroller modules for interfacing with other hardware due to its cost-

A Deep Learning Approach for Plant Disease Detection

Publisher: IEEE Cite This PDF

C. Venkatesh ; L. Sivayamini ; T. Sandhya ; K. Santhosh Naik ; P. Raja Rajeswari ; T. Sohith Yadav **All Authors**

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II. Literature Review

III. Proposed System

IV. Simulation Results

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Abstract:
Agriculture evolved as one of the world's largest and most significant strategic sectors. In developing countries such as India, the global population is predicted to grow dramatically in the future years. Crops such as mango and sweet orange have a large economic and cultural impact on India. However, plant diseases are now a major global issue, producing food shortages in many countries. Plant diseases impair agricultural productivity and, if not diagnosed, can lead to food shortages, threatening global security and small-scale farmers' livelihoods. Early diagnosis of such crops is critical for avoiding and controlling plant diseases, as well as making informed agricultural decisions. Identifying these diseases accurately is critical for enhancing agricultural production. Traditional agricultural disease detection methods are time-consuming, expensive, and frequently result in false diagnosis. There is a need for an automated approach to detect leaf disease. The emergence of deep learning algorithms has presented a possible solution to this challenge, as they have exhibited outstanding accuracy and efficiency across a variety of sectors. As a result, a deep learning-based method for detecting mango and sweet orange plant diseases is proposed in this work. The proposed system aims to identify plant diseases. It utilizes a dataset size of 50 leaf disease images from the Kaggle database, which are pre-processed by resizing for uniformity. A Convolutional Neural Network (CNN) with ResNet is then used to classify the leaf type, such as mango or sweet orange, and segment the images to detect abnormalities. Finally, the effectiveness of this system is evaluated by using parameters such as accuracy, sensitivity, specificity, MSE, and PSNR. The proposed system obtained an accuracy of 98.43%.

Published in: 2025 IEEE International Conference on Contemporary Computing and Communications (InC4)

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DOI: 10.1109/InC465408.2025.11256427

Date Added to IEEE *Xplore*: 01 December 2025

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ISBN Information:

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AI Trading: A Growing Part of Fintech Industry

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Jayanthi L. ; Suganya A. ; G. Maya ; Srinivasan M. ; S. Fayaz Begam ; Vanguri Smitha All Authors

4 Cites in Papers

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II. Literature Survey

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Abstract:
The financial technology industry is undergoing a transformation as a result of the increased usage of artificial intelligence (AI) in financial trading. New developments in artificial intelligence-driven trading systems are investigated in this study. Particular attention is paid to the ways in which these systems might be utilized in predictive analytics, portfolio optimization, high-frequency trading, and market sentiment analysis. By utilizing artificial intelligence techniques such as machine learning, deep learning, and natural language processing, these systems exhibit an accuracy and efficiency that is unmatched in the industry. Additionally, the paper covers significant obstacles, such as data quality, regulatory compliance, ethical considerations, and market stability. Additionally, the article presents future directions in explainable artificial intelligence, blockchain integration, and quantum computing. These findings highlight the potential for artificial intelligence to bring about a transformation in global financial markets.

Published in: 2025 International Conference on Technology Enabled Economic Changes (InTech)

Date of Conference: 27-28 February 2025

DOI: 10.1109/InTech64186.2025.11198378

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Publisher: IEEE

ISBN Information:
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Conference Location: Tashkent, Uzbekistan

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Edge Intelligence: Unique Machine Learning Strategies for Enhancing Real-Time IoT Data Processing

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Manoj Pal | Rajesh Dey | Rupali Atul Mahajan | Mudasser Khan | Abrar Ahmed Syed | Shaik Karimullah | All Authors

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Abstract

This lagtime intelligence framework is a premise for real-time data processing in IoT settings. It solves the dilemma of latency, bandwidth consumption, and data privacy via hierarchical federated learning, resource-aware scheduling, and advanced communication optimizations. The experiments found that the new-layered paradigm gave a higher model accuracy and cut the training time rather sharply as compared with traditional federated and cloud systems. Its components guarantee evacuation under privacy-preserving techniques and fault tolerance to establish reliable operation in a dynamic edge environment. These improvements provide a scalable and efficient ground for next-gen IoT applications in smart cities, industrial automation, and intelligent transportation systems.

Published in: 2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)

Date of Conference: 31 July 2025 - 02 August 2025

DOI: 10.1109/QPAIN66474.2025.11171994

Date Added to IEEE *Xplore*: 29 September 2025

Publisher: IEEE

ISBN Information:

Conference Location: Rangpur, Bangladesh

Deep Learning Methods for Real -Time Detection of Deepfake Faces in Images and Videos

Publisher: IEEE Cite This PDF

J. Chinna Babu , Alind , Mallikharjuna Rao Nuka , C. Venkatesh , T.Naresh Kumar , Adarsh Kumar **All Authors**

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III. Existing System

IV. Proposed System

V. Results and Discussions

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Abstract:
This paper presents a Deep Learning Methods for Real- Time Detection of Deepfake Faces in Images and Videos which employs a hybrid deep learning model, consisting of a Long-Short Term Memory (LSTM), ResNet50, and Convolution Neural Networks (CNNs). A CNN architecture was built to extract strong spatial information from facial images, allowing for infections in the identification of extremely subtle abnormal features such as artificial lighting, irregular facial textures, and pixel-level anomalies found in deepfake media. Further, it utilizes a deep residual network, ResNet50. Such a deep network allows the machine to embed higher-level features and render subtle manipulation artifacts viable for detection, possible to overlook in other elementary CNN models. LSTMs are used in the present work to capture long-term temporal dependencies among various identified frames. This Model receives training from many datasets containing collections of diverse real and synthetic facial images and video. It also uses preprocessing techniques to make certain that the model generalizes well in various situations of lighting, poses, or video compressions. This includes face alignment, noise reduction, data augmentations-an increase that directs filtering. Over 93% accuracy was achieved on all benchmark datasets for real-world deepfake detection tasks, using a hybrid CNN-ResNet50-LSTM model. This work shows the significant benefit coming from the integration of temporal and spatial analysis that can practically be applied for security, ethical media authentication, and content verification.

Published in: 2025 2nd International Conference On Multidisciplinary Research and Innovations in Engineering (MRIE)

Date of Conference: 30-31 July 2025

DOI: 10.1109/MRIE66930.2025.11156555

Date Added to IEEE *Xplore*: 19 September 2025

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Conference Location: Gurugram, India

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Delivery of Medicine Using a UAV Powered by the KK Copter 2.1.15 Flight Controller

Publisher: IEEE Cite This PDF

J. Chinna Babu ; Alind ; C. Venkatesh ; Mallikharjuna Rao Nuka ; Adarsh Kumar **All Authors**

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Abstract:
This In order to improve the effectiveness of medical supply deliveries, especially in remote or emergency scenarios, this research suggests a revolutionary drone system. The drone overcomes the drawbacks of earlier designs that used smaller batteries and lower-rated motors by integrating cutting-edge parts such as a 2200 mAh Li-Po battery, 1000 KV BLDC motors, and a K K Copter 2.1.15. The operational efficacy of earlier drones was limited by their short flying times and payload capacities, which were caused by their 500 KV BLDC motors and 1000 mAh batteries. Our suggested drone technology, on the other hand, greatly increases flight time and enhances cargo capacity, making it appropriate for long-distance medical missions. Furthermore, precise, automatic delivery and real-time control are made possible by the addition of a servo motor that is coupled to a first aid kit, GPS navigation, and a 6-channel remote transmitter. This improved system provides a more dependable healthcare logistics solution, especially for time-sensitive operations like disaster assistance. Our concept is a useful tool for contemporary healthcare and emergency response demands since it significantly outperforms previous models.

Published in: 2025 2nd International Conference On Multidisciplinary Research and Innovations in Engineering (MRIE)

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Publisher: IEEE
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Conference Location: Gurugram, India

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Chapter

A Comprehensive Review on Challenges, Frameworks, and Future Trends for Intelligent Security in Industrial IoT

By
Shaik Karimullah (/search?contributorName=Shaik Karimullah&contributorRole=author&redirectFromPDP=true&context=ubx) (https://orcid.org/0000-0003-1841-2137)
,
J. Chinna Babu (/search?contributorName=J. Chinna Babu&contributorRole=author&redirectFromPDP=true&context=ubx) (https://orcid.org/0000-0001-9005-0615)
, Anwar Bhasha Pattan (/search?contributorName=Anwar Bhasha Pattan&contributorRole=author&redirectFromPDP=true&context=ubx), Sultan Ahmad (/search?contributorName=Sultan Ahmad&contributorRole=author&redirectFromPDP=true&context=ubx) (https://orcid.org/0000-0002-3198-7974)
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Book Cognitive Security for Industrial IoT (https://www.taylorfrancis.com/books/mono/10.1201/9781003609773/cognitive-security-industrial-iot?refId=56a8155c-890b-4b38-bfd9-ff2e25c52ac8&context=ubx)

Edition	1st Edition
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Imprint	CRC Press
Pages	18

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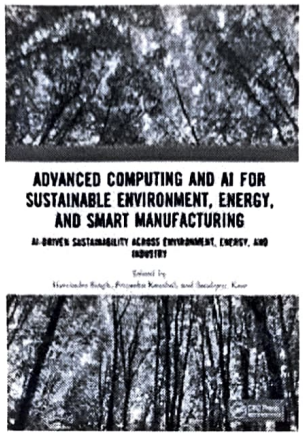

A Review on Edge-AI powered image segmentation and sensor-based crop management

By G. Thirumalaiah (/search?contributorName=G. Thirumalaiah&contributorRole=author&redirectFromPDP=true&context=ubx), P. Partha Praneeth Reddy (/search?contributorName=P. Partha Praneeth Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), S. Sai Sree (/search?contributorName=S. Sai Sree&contributorRole=author&redirectFromPDP=true&context=ubx), Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Sai Pavani (/search?contributorName=Y. Sai Pavani&contributorRole=author&redirectFromPDP=true&context=ubx), E. Santhosh Kumar (/search?contributorName=E. Santhosh Kumar&contributorRole=author&redirectFromPDP=true&context=ubx), M. Hanumanthu (/search?contributorName=M. Hanumanthu&contributorRole=author&redirectFromPDP=true&context=ubx)

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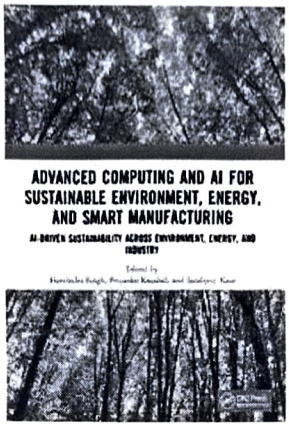

A review on Smart Path Finder: Lightweight visual companion for impaired mobility using edge AI

By G. Thirumalaiah (/search?contributorName=G. Thirumalaiah&contributorRole=author&redirectFromPDP=true&context=ubx), E. Mahaboob Basha (/search?contributorName=E. Mahaboob Basha&contributorRole=author&redirectFromPDP=true&context=ubx), M. Nandini (/search?contributorName=M. Nandini&contributorRole=author&redirectFromPDP=true&context=ubx), Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), M. Hanumanthu (/search?contributorName=M. Hanumanthu&contributorRole=author&redirectFromPDP=true&context=ubx), Kamboji Ganga Naga Pavan Kumar (/search?contributorName=Kamboji Ganga Naga Pavan Kumar&contributorRole=author&redirectFromPDP=true&context=ubx), Earla Karthik (/search?contributorName=Earla Karthik&contributorRole=author&redirectFromPDP=true&context=ubx)

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Smart Self-Powered Wireless Sensor Network for Industrial Monitoring

Publisher: Wiley Telecom Cite This PDF

is part of: Smart Chips for Smart Devices: VLSI Design for Next-Generation IoT Solutions

G. Thirumalaiah , Mudassir Khan All Authors

Editor(s): Abhishek Kumar , Suman Lata Tripathi

Abstract

Chapters & Sections

» Front Matter

» Integration of Nanotechnology and Machine Learning in Healthcare

» FPGA-Based Hardware Accelerators for ANN and DNN

» Analysis of Double-Gate Tunnel FET Using AI and ML

» NC-TFET Device and Its Applications in Future VLSI

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Summary The proposed project, Smart Self-Powered Wireless Sensor Network for Industrial Monitoring using Machine Learning, aims to create a self-sustaining industrial monitoring system powered by a 12V battery, which is charged via renewable energy sources like a solar panel and piezoelectric sensor. The system seamlessly switches between battery and AC mains power using relays to ensure uninterrupted operation. The core processing unit is a Raspberry Pi, which gathers information from a variety of sensors, such as a DHT11 for measuring humidity and ambient temperature, a DS18B20 for measuring the temperature inside the machine, and a MQ-135 gas sensor for identifying dangerous chemicals. The system also incorporates a motor driver to control industrial equipment speed, with two switches used to increase and decrease the motor speed. Additional components include an LCD for data display, a buzzer for audible alerts, and a CPU fan that activates when internal temperatures exceed safe limits. A GSM module is included for sending critical alert messages. The incorporation of machine learning, which analyzes sensor data to forecast and automate system reactions like setting off alerts or turning on actuators, is the basis of the system. This smart monitoring solution ensures efficient, real-time environmental and equipment condition tracking, making it highly suitable for industrial automation and safety.

Page(s): 141 - 178

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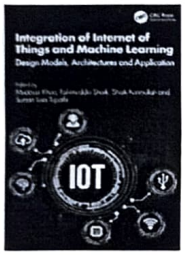

Chapter

Enhancing Remote Healthcare with Internet of Things

An Integrated Imaging and Machine Learning Methodology for Accurate Retinal Disease Diagnosis

By Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), Fahimuddin Shaik (/search?contributorName=Fahimuddin Shaik&contributorRole=author&redirectFromPDP=true&context=ubx), Anwar Bhasha Pattan (/search?contributorName=Anwar Bhasha Pattan&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Karimullah (/search?contributorName=Shaik Karimullah&contributorRole=author&redirectFromPDP=true&context=ubx)

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Heart Rate Estimation Using an Electrocardiogram-Aided Photoplethysmography Signal Quality Assessment Framework

Integration of Internet of Things and Machine Learning: Design Models, Architectures and Application • Book Chapter • 2026 • DOI: 10.1201/9781003634768-16

Naga Sankar Reedy K. [a]; Hariobulesu, Peddapullaiahgari [b]; Karimullah, Shaik [c]; Pattan, Anwar Bhasha [d]; Shaik, Fahimuddin [e]

[a] Department of ECE, Sri Venkateswara College of Engineering, Kadapa, India

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Abstract

A non-invasive method for taking human vital signs is photoplethysmography (PPG). However, wearable technology, which is prone to artifacts, is typically used to collect PPG. Measurement accuracy will be adversely affected by artifact-induced signal corruption. For accurate measurement in this regard, a signal quality assessment (SQA) system is necessary. SQA's design flow has historically mostly depended on the expert's individual observations. This study introduces a signal quality evaluation system for PPG that uses an electrocardiography (ECG). The suggested SQA has a greater capacity to identify low-quality signals by leveraging the functional relationship between PPG and ECG. Lastly, we tested our system using heart rate estimation. The suggested system achieves a lower mean out-and-out error in the

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Improved Fetal Electrocardiogram Detection Using a Hybrid Wavelet- Based Denoising Method

Integration of Internet of Things and Machine Learning: Design Models, Architectures and Application • Book Chapter • 2026 • DOI: 10.1201/9781003634768-15

Naga Sankar Reedy K. [a]; Hariobulesu, Peddapullaiahgari [b]; Karimullah, Shaik [c]; Pattan, Anwar Bhasha [d]; Shaik, Fahimuddin [c]; +1 author

[a] Department of ECE, Sri Venkateswara College of Engineering, Kadapa, India

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Abstract

This study shows a mixed way to get fetal electrocardiogram (fECG) signals utilizing the recursive least squares (RLS) algorithm and the stationary wavelet transform (SWT). The goal is to improve fECG data by getting rid of noise and artifacts and finding R-peaks accurately using either a threshold-based denoising method or the improved spatially selective noise filtering (ISSNF) method in the wavelet domain. Finding the R-peak accurately is important for detecting fetal heart problems and getting important clinical information. After the fECG is taken, a convolutional neural network (CNN) is used to figure out the fetal heart rate (FHR). This makes it possible to keep an eye on the health of the fetus. SWT breaks down the abdominal electrocardiogram (ECG) into parts at different scales, with the scales selected based on the amount of noise. The RLS approach gets rid of the mother's ECG, and then ISSNF or threshold-based methods are used to eliminate noise. Both real and fake datasets are utilized to test

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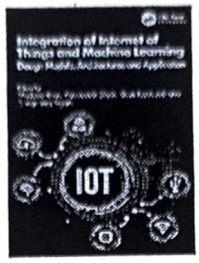

A Deep Learning and Optimization-Based Cardiac Diagnosis System for Heart Disease Classification Using Electrocardiogram Signals

By C. Venkatesh (/search?contributorName=C. Venkatesh&contributorRole=author&redirectFromPDP=true&context=ubx), L. Sivayamini (/search?contributorName=L. Sivayamini&contributorRole=author&redirectFromPDP=true&context=ubx), M. Venkata Dasu (/search?contributorName=M. Venkata Dasu&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Karimullah (/search?contributorName=Shaik Karimullah&contributorRole=author&redirectFromPDP=true&context=ubx), T. Lakshminarayana (/search?contributorName=T. Lakshminarayana&contributorRole=author&redirectFromPDP=true&context=ubx)

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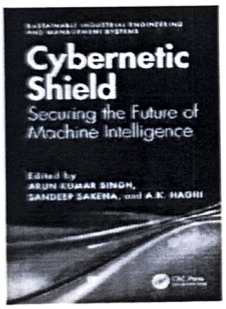

Chapter

Addressing Data Security and Privacy Challenges

A Critical Analysis of Convolutional Neural Network (CNN) Applications

By Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), Rupali Mahajan (/search?contributorName=Rupali Mahajan&contributorRole=author&redirectFromPDP=true&context=ubx), Rajesh Dey (/search?contributorName=Rajesh Dey&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Karimullah (/search?contributorName=Shaik Karimullah&contributorRole=author&redirectFromPDP=true&context=ubx)

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IoT based integrated farming: optimizing agriculture with smart sensors

By R. Mahesh Kumar (/search?contributorName=R. Mahesh Kumar&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Pavan Kumar Reddy (/search?contributorName=Y. Pavan Kumar Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), N. Vishnu Vardhan (/search?contributorName=N. Vishnu Vardhan&contributorRole=author&redirectFromPDP=true&context=ubx), D. Venkata Sai Tharun (/search?contributorName=D. Venkata Sai Tharun&contributorRole=author&redirectFromPDP=true&context=ubx), D. Yaswanth (/search?contributorName=D. Yaswanth&contributorRole=author&redirectFromPDP=true&context=ubx), M. Surendra (/search?contributorName=M. Surendra&contributorRole=author&redirectFromPDP=true&context=ubx)

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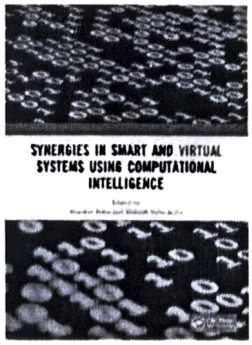

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Improved channel estimation in MIMO-THz systems using sparse sensing and dictionary optimization

By K. Shankar (/search?contributorName=K. Shankar&contributorRole=author&redirectFromPDP=true&context=ubx), K. Madhavi Priya (/search?contributorName=K. Madhavi Priya&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Sunanda (/search?contributorName=Y. Sunanda&contributorRole=author&redirectFromPDP=true&context=ubx), M. Ravi Kishore (/search?contributorName=M. Ravi Kishore&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Pavan Kumar Reddy (/search?contributorName=Y. Pavan Kumar Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), P. Sireesha (/search?contributorName=P. Sireesha&contributorRole=author&redirectFromPDP=true&context=ubx)

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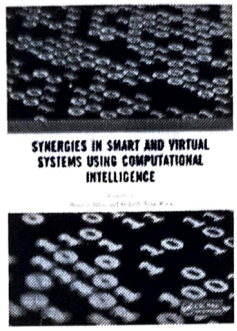

Empowering accessibility: portable voice-enabled interface for disabled users

By K. Shankar (/search?contributorName=K. Shankar&contributorRole=author&redirectFromPDP=true&context=ubx), K. Reddy (/search?contributorName=K. Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Pavan Kumar Reddy (/search?contributorName=Y. Pavan Kumar Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), M. Ravi Kishore (/search?contributorName=M. Ravi Kishore&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Sunanda (/search?contributorName=Y. Sunanda&contributorRole=author&redirectFromPDP=true&context=ubx), A. Varshitha (/search?contributorName=A. Varshitha&contributorRole=author&redirectFromPDP=true&context=ubx)

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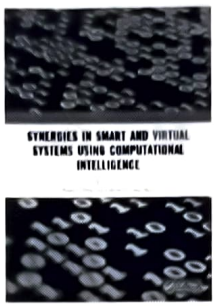

Low power 5-bit flash ADC design utilizing dual-stage opamp and optimized Wallace tree encoder for enhanced precision

By Y. Sunanda (/search?contributorName=Y. Sunanda&contributorRole=author&redirectFromPDP=true&context=ubx), K. Shankar (/search?contributorName=K. Shankar&contributorRole=author&redirectFromPDP=true&context=ubx), K. Chandrahasa Reddy (/search?contributorName=K. Chandrahasa Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), O. Hemakeshavlu (/search?contributorName=O. Hemakeshavlu&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Pavan Kumar Reddy (/search?contributorName=Y. Pavan Kumar Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), A. Swapna (/search?contributorName=A. Swapna&contributorRole=author&redirectFromPDP=true&context=ubx)

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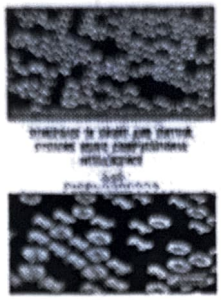

Deep learning for enhanced diagnosis of diabetic retinopathy

By L. Sivayamini (/search?contributorName=L. Sivayamini&contributorRole=author&redirectFromPDP=true&context=ubx), C. Venkatesh (/search?contributorName=C. Venkatesh&contributorRole=author&redirectFromPDP=true&context=ubx), B. Suresh Babu (/search?contributorName=B. Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), G. Supriya (/search?contributorName=G. Supriya&contributorRole=author&redirectFromPDP=true&context=ubx), K. Yathiswar Reddy (/search?contributorName=K. Yathiswar Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), R. Vishnu Vardhan (/search?contributorName=R. Vishnu Vardhan&contributorRole=author&redirectFromPDP=true&context=ubx)

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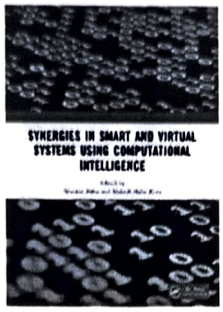

Design of high speed 5-bit flash ADC using double tail comparator for portable devices

By P. Syamaladevi (/search?contributorName=P. Syamaladevi&contributorRole=author&redirectFromPDP=true&context=ubx), G. Shreya (/search?contributorName=G. Shreya&contributorRole=author&redirectFromPDP=true&context=ubx), J. Sivaprasad (/search?contributorName=J. Sivaprasad&contributorRole=author&redirectFromPDP=true&context=ubx), V. Pavan Kumar Reddy (/search?contributorName=V. Pavan Kumar Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), D. Rajeswari (/search?contributorName=D. Rajeswari&contributorRole=author&redirectFromPDP=true&context=ubx)

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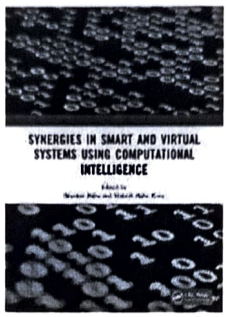

Design and simulation of FINFET 4-bit barrel shifter using GDI technique for low power applicati

By P. Syamala Devi (/search?contributorName=P. Syamala Devi&contributorRole=author&redirectFromPDP=true&context=ubx), K. Sudharshan Reddy (/search?contributorName=K. Sudharshan Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), C. Vinuthna (/search?contributorNam Vinuthna&contributorRole=author&redirectFromPDP=true&context=ubx), A. Venkatahemanth (/search?contributorName=A. Venkatahemanth&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Yaswanth (/search?contributorName=Y. Yaswanth&contributorRole=author&redirectFromPDP=true&context=ubx)

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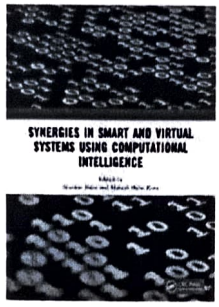

High performance 8-bit approximate Dadda multiplier with GDI logic-based approximate and exact 4:2 compressors using finFET technology

By M. Tejaswi (/search?contributorName=M. Tejaswi&contributorRole=author&redirectFromPDP=true&context=ubx), P. Syamala Devi (/search?contributorName=P. Syamala Devi&contributorRole=author&redirectFromPDP=true&context=ubx), S. Murali (/search?contributorName=S. Murali&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Manideep (/search?contributorName=Y. Manideep&contributorRole=author&redirectFromPDP=true&context=ubx), K. Pavani (/search?contributorName=K. Pavani&contributorRole=author&redirectFromPDP=true&context=ubx), C. Mounika (/search?contributorName=C. Mounika&contributorRole=author&redirectFromPDP=true&context=ubx)

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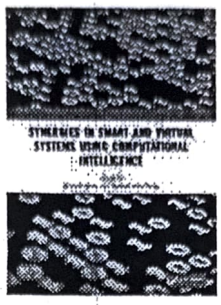

An innovative deep learning model for the early identification and management of gestational diabetes

By L. Sivayamini (/search?contributorName=L. Sivayamini&contributorRole=author&redirectFromPDP=true&context=ubx), C. Venkatesh (/search?contributorName=C. Venkatesh&contributorRole=author&redirectFromPDP=true&context=ubx), M. Venkata Dasu (/search?contributorName=M. Venkata Dasu&contributorRole=author&redirectFromPDP=true&context=ubx), S. Lokeswari (/search?contributorName=S. Lokeswari&contributorRole=author&redirectFromPDP=true&context=ubx), G. Keerthi (/search?contributorName=G. Keerthi&contributorRole=author&redirectFromPDP=true&context=ubx), K. Nagaraju (/search?contributorName=K. Nagaraju&contributorRole=author&redirectFromPDP=true&context=ubx)

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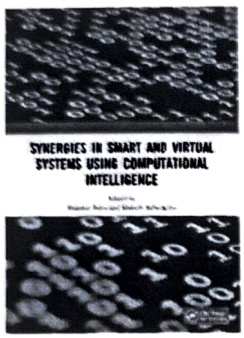

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Solar smart track: intelligent dual-axis tracking with fault detection for enhanced performance

By R. Mahesh Kumar (/search?contributorName=R. Mahesh Kumar&contributorRole=author&redirectFromPDP=true&context=ubx), M. Ravikishore (/search?contributorName=M. Ravikishore&contributorRole=author&redirectFromPDP=true&context=ubx), S. Fatima Jabeen (/search?contributorName=S. Fatima Jabeen&contributorRole=author&redirectFromPDP=true&context=ubx), K. Anitha Reddy (/search?contributorName=K. Anitha Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), C. Bharath Kumar (/search?contributorName=C. Bharath Kumar&contributorRole=author&redirectFromPDP=true&context=ubx), P. Hari Krishna (/search?contributorName=P. Hari Krishna&contributorRole=author&redirectFromPDP=true&context=ubx)

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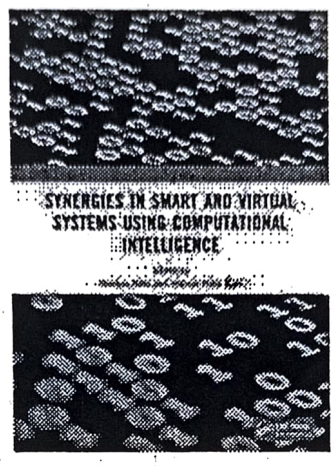

Design and implementation of area efficient high-speed multiplier using Han-Carlson adder

By CH Nagaraju (/search?contributorName=CH Nagaraju&contributorRole=author&redirectFromPDP=true&context=ubx), C. Venkatesh (/search?contributorName=C. Venkatesh&contributorRole=author&redirectFromPDP=true&context=ubx), P. Bhargavi (/search?contributorName=P. Bhargavi&contributorRole=author&redirectFromPDP=true&context=ubx), B. Chakrapani Reddy (/search?contributorName=B. Chakrapani Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Arif (/search?contributorName=Shaik Arif&contributorRole=author&redirectFromPDP=true&context=ubx), C. Chandana Priya (/search?contributorName=C. Chandana Priya&contributorRole=author&redirectFromPDP=true&context=ubx)

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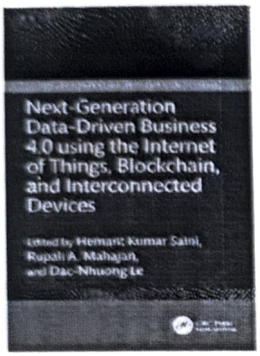

Chapter

Immutable and transparent harvesting of Web Blockchain

A new application area of big tech vulnerability

By Rajesh Dey (/search?contributorName=Rajesh Dey&contributorRole=author&redirectFromPDP=true&context=ubx), Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), Maram Bani Younes (/search?contributorName=Maram Bani Younes&contributorRole=author&redirectFromPDP=true&context=ubx), Barga Mohammed Mujahid (/search?contributorName=Barga Mohammed Mujahid&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Karimullah (/search?contributorName=Shaik Karimullah&contributorRole=author&redirectFromPDP=true&context=ubx)

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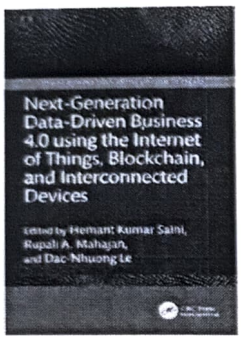

Chapter

Blockchain complementary model

A new way for devouring Smart Data by driverless vehicles for next generation communication

By Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), Rajesh Dey (/search?contributorName=Rajesh Dey&contributorRole=author&redirectFromPDP=true&context=ubx), Vijaya Kumbhar (/search?contributorName=Vijaya Kumbhar&contributorRole=author&redirectFromPDP=true&context=ubx), Jyoti Shendage (/search?contributorName=Jyoti Shendage&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Karimullah (/search?contributorName=Shaik Karimullah&contributorRole=author&redirectFromPDP=true&context=ubx)

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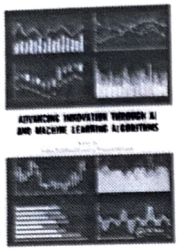

Chapter

DeepWave: Revolutionizing underwater communication with Li-Fi technology

By K. Riyazuddin (/search?contributorName=K. Riyazuddin&contributorRole=author&redirectFromPDP=true&context=ubx), K. Deekshitha (/search?contributorName=K. Deekshitha&contributorRole=author&redirectFromPDP=true&context=ubx), P. Adiseshu (/search?contributorName=P. Adiseshu&contributorRole=author&redirectFromPDP=true&context=ubx), J. Bhavani (/search?contributorName=J. Bhavani&contributorRole=author&redirectFromPDP=true&context=ubx), P. Dinesh (/search?contributorName=P. Dinesh&contributorRole=author&redirectFromPDP=true&context=ubx)

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ABSTRACT

Underwater communication is inherently difficult due to the distinctive properties of the underwater environment, which create numerous obstacles for data transmission. This paper explores these challenges and proposes Light Fidelity (LiFi) as a practical solution. Li-Fi technology, which uses LED light sources for data transmission, provides an efficient and affordable means to address these issues. By employing Li-Fi transmitters and receivers, this approach overcomes the shortcomings of conventional communication methods—such as electromagnetic, acoustic, and optical systems— offering faster data transfer rates and enhanced reliability for underwater communication. Ultimately, Li-Fi presents a promising alternative for improving underwater data transmission.

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Chapter 12

Enhanced Encryption and Digital Signature Scheme Utilizing EC-Based Encryption and Multi-Chaotic Pseudo Random Generation

Mudassir Khan, S.Z. Parveen, Shaik Karimullah, Barga Mohammed Mujahid

Book Editor(s):Surajit Mondal, Adesh Kumar, Mudassir Khan

First published: 08 August 2025

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Summary

This work introduces an improved image encryption and digital signature technique designed to boost security against a range of attacks. The suggested methodology utilizes two encryption stages, making use of an elliptic curve Diffie-Hellman (ECDH) shared secret key and a key that is reliant on the input image. By utilizing the amalgamation of these keys, an elevated level of unpredictability is attained, hence strengthening security protocols against potential risks. The process of encryption involves the grouping of pixels to create integer values, which are then subjected to an XOR procedure. The process of decryption entails performing an inverse modulo operation, followed by evaluating the Structural Similarity Index (SSIM) and Peak Signal-to-Noise Ratio (PSNR) values on the decrypted images in order to determine their level of randomness. The approach additionally includes the production of digital signatures to ensure integrity, authentication, and non-repudiation. The experimental findings clearly establish the superiority of the proposed technique in terms of both security and efficiency when compared to existing encryption approaches based on elliptic curve.

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Chapter 5

Introduction to Biosensors for Point-of-Care Testing

IoT-Based Vitamin D3 Biosensor

Asif Hussain Shaik, Chinna Babu Jyothi

Book Editor(s):Inamuddin, Tariq Altalhi, Abeer Alosaimi, Jorddy Neves Cruz

First published: 08 August 2025

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PDF

Summary

Vitamin D3, also known as cholecalciferol, is crucial for overall health and is linked to various aspects of well-being, including immune function and the prevention of chronic illnesses. Recent studies have highlighted the association between low levels of Vitamin D3 and an increased risk of cardiovascular disease (CVD), diabetes, and obesity, making it a significant public health biomarker. Given the high prevalence of these chronic diseases worldwide, monitoring of Vitamin D3 levels has become increasingly important, especially in regions where low sun exposure and poor dietary habits contribute to widespread deficiency. This deficiency increases the risk of developing chronic disease. This work proposes a point-of-care system using a three-electrode biosensor based on the Internet of Things (IoT) to rapidly and accurately measure Vitamin D3 levels. The system utilizes an immobilized working electrode surface with an enzyme that modulates the current flow between the working electrode and auxiliary electrode in response to the biomarker. This change in electrical activity enables the precise detection of Vitamin D3 within the physiological range.

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Chapter 10

An Automated System to Identify and Detect the Faults in Bottle Cap Production and Visual Inspection Using Raspberry Pi

Shaik Asif Hussain, Mudassir Khan, J. Chinna Babu, Shaik Javeed Hussain, Yu-Chen Hu

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First published: 08 August 2025

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Summary

Computer vision is one of the most potent techniques today for many applications. Many National manufacturers still use traditional sensors for inspection, which involve expensive vision sensors and manual human verification. The proposed work is about implementing Digital image processing techniques to inspect and detect faulty bottle caps in real-time during the bottling process with low-cost resources. Some low-cost models are available in the market but have disadvantages compared to the work. The primary image processing steps used are image acquisition with a Raspberry Pi camera, followed by the Raspberry Pi processor to analyze the image using the Haar cascade algorithm, Scale-invariant feature transform (SIFT), and through Open-Source computer vision library (OpenCV) in Python. A Virtual Network Computing (VNC) viewer monitors and detects the results through a laptop. Immediately, action is taken by Light Emitting Diode (LED) notification and real-time visual detection. The Haar Cascade approach is proposed and implemented for the inspection and detection to represent the Region of Interest (ROI). The actual cases investigated for incorrect placement of a bottle's cap and a bottle with defected cap are captured as significant results from the conveyor belt. Furthermore, the water bottles made of polypropylene were used to test the incorrect placement of the cap case, which was additionally verified for the detection and inspection of a moving object on the conveyor belt. The measured and calculated results show the detection accuracy of whether the bottle's cap is present. Hence, our well-trained system model uses the proposed system design in many real-time applications that can be implemented on any moving object for faulty detection.

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Chapter 11

DDoS Detection Using Semi-Supervised Machine Learning Algorithms

Ajmeera Kiran, Mudassir Khan, J. Chinna Babu, B. P. Santosh Kumar, Mohammad Mazhar Nezami

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Summary

The attack is still one of the most serious hazards that the internet faces, despite the fact that there are more powerful kinds of machine learning (ML) for detecting distributed denial of service attacks. The majority of the machine learning algorithms that are now accessible are, in essence, DDoS detection tactics. These algorithms can be classified into two categories: supervised and unsupervised. In order for supervised machine learning algorithms to detect distributed denial of service attacks on the internet, it is vital that classified visitor datasets be making themselves available. The majority of the machine learning algorithms that are now accessible are, in essence, DDoS detection tactics. These algorithms can be classified into two categories: supervised and unsupervised. When it comes to supervised machine learning methods, the availability of classified visitor datasets is absolutely necessary in order to identify distributed denial of service (DDoS) assaults. Unsupervised machine learning approaches, on the other hand, are able to identify assaults by examining the traffic that is coming from the community as a whole. Both techniques face difficulties because to the vast amount of information that is available on the traffic that is generated by community websites.

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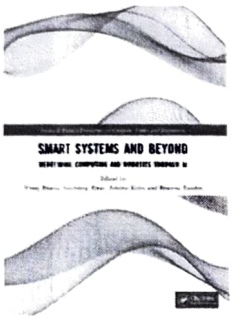

Chapter

A Nowel Low Power Analog Comparator Design for Biomedical Instrumentation

By M Hanumanthu (/search?contributorName=M Hanumanthu&contributorRole=author&redirectFromPDP=true&context=ubx), Kummithi Ganesh (/search?contributorName=Kummithi Ganesh&contributorRole=author&redirectFromPDP=true&context=ubx), Pothanaboyina Lavanya (/search?contributorName=Pothanaboyina Lavanya&contributorRole=author&redirectFromPDP=true&context=ubx), Derangala Mani (/search?contributorName=Derangala Mani&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Mohammad Adnan (/search?contributorName=Shaik Mohammad Adnan&contributorRole=author&redirectFromPDP=true&context=ubx), Muddasir Khan (/search?contributorName=Muddasir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), G. Thirumalaiah (/search?contributorName=G. Thirumalaiah&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Smart Systems and Beyond (https://www.taylorfrancis.com/books/mono/10.1201/9781042026289/smart-systems-beyond?refId=7fbb1da0-a5dd-470e-8b1a-56bdba0c3648&context=ubx)

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ABSTRACT

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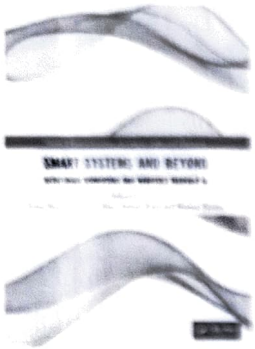

Chapter

Design of Efficient Precision Analog Comparator for Amperometric Glucose Sensing

By M. Hanumanthu (/search?contributorName=M. Hanumanthu&contributorRole=author&redirectFromPDP=true&context=ubx), T. Dharani (/search?contributorName=T. Dharani&contributorRole=author&redirectFromPDP=true&context=ubx), K. Bharathi (/search?contributorName=K. Bharathi&contributorRole=author&redirectFromPDP=true&context=ubx), Mudassir Khan (/search?contributorName=Mudassir Khan&contributorRole=author&redirectFromPDP=true&context=ubx), G. Thirumalaiah (/search?contributorName=G. Thirumalaiah&contributorRole=author&redirectFromPDP=true&context=ubx), V. Harsha Vardhan Reddy (/search?contributorName=V. Harsha Vardhan Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Akhil (/search?contributorName=Y. Akhil&contributorRole=author&redirectFromPDP=true&context=ubx)

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ABSTRACT

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Online Payment Fraud Detection Using Machine Learning

P. Swathi(✉), M. Sravani, V. Sivani, M. Susmitha, and M. Swetha

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Abstract. Essentially, electronic bowing ID for a protected environment revolved around our main objective. We will start by utilizing the available datasets for our work with them. Following that, the client will get specific requests for the web locale to be reshaped in order to test an instructional sequence of events. In order to gather the insignificant timberlands, the assessment is applied to the overall appraisal, illuminating the mixture, and the customer provides the most recent dataset finally providing reassurance on the accuracy of the results related data. From that point on, a portion of the specified characteristics will be payable, taking into consideration the area of the impacted risk and how the reasonable model establishes an association.

Keywords: Random forest · Decision tree · Logistic Regression

1 Introduction

Since online transactions are a necessary component of our daily routines, electronic part structures are now less vulnerable to practical jokes. Never before have there been such distinct strong points for the foundation of inspiration openness frameworks. Man-made information (ML) structures have been a respectable tactic for attracting captivating electronic content. In order to convince certified research models, it is crucial to provide answers to a lot of data for approach and assessment. A fantastic resource for creating and evaluating such models is the Passim dataset. Passim is a fake financial dataset that was made to look like a helpful money trading association. Building ML models with this choice is reasonable because it is evident that these.

2 Related Work

Recent studies have focused on developing effective methods for credit card fraud detection. The Nilson Report highlighted the growing concern of card fraud worldwide [1]. To address this, researchers have explored various machine learning techniques. Tato and Nkambou improved the Adam optimizer, which is crucial for training deep neural networks [2]. This optimization technique can enhance fraud detection models.

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Detection and Classification of Pneumonia in Chest X-ray Images Using Deep Learning Techniques

B. Naveen Kumar(✉), U. Rajesh, S. Mahaboob Basha, C. Seshikanth, and K. Shailendra Kumar

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Abstract. In the intricate realm of modern medical diagnostics, the crucial goals revolve around the nuanced identification and categorization of pneumonia gleaned from chest X-ray images. Pneumonia, a respiratory infection, tends to proliferate in areas grappling with heightened pollution, unsanitary living conditions, and inadequate medical facilities. The imperative of improving treatment outcomes and bolstering survival rates places pneumonia diagnosis at the forefront, demanding swift and pinpoint precision. However, the visual interpretation of chest X- rays persists as a challenging and inherently subjective endeavor. This endeavor embarks on employing cutting- edge deep learning techniques to surmount extant quandaries surrounding pneumonia diagnosis. The strategy involves deploying deep transfer learning to circumvent the dearth of labeled datasets due to data availability constraints. With an unwavering emphasis on refining accuracy, a pioneering Convolutional Neural Network (CNN) model takes shape, seamlessly amalgamating CovXNet, RNN, VGG16, and an evolutionary upgrade beyond the prevailing ResNet 50. This research venture is poised to confront emerging challenges, including imbalances within datasets, the subjective nuances inherent in X-ray interpretations, and the optimization intricacies of transfer learning techniques. Through a judicious blend of critical analysis and methodological refinement, this scholarly pursuit aims not only to furnish a robust Comprehensive Diagnostic Infrastructure for Pneumonia (CDIA) but to usher in substantive enhancements in precision and applicability across diverse patient demographics and multifarious clinical settings, promising a transformative impact on the landscape of medical diagnostics.

Keywords: Pneumonia Diagnosis · Chest X-ray Images · Deep Learning Techniques · Transfer Learning Methods · Computer-Aided Diagnosis · Medical Imaging

1 Introduction

In the labyrinthine landscape of modern medical diagnostics, the identification and categorization of pneumonia within chest X-ray images stand as a formidable challenge, requiring both precision and nuance. Pneumonia, a pervasive respiratory affliction, finds

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Enhancing Cloud Security Through Data Encryption and Dispersion

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Abstract. In the era of widespread digital transformation and cloud adoption, ensuring robust security measures is paramount to safeguarding sensitive data. This paper explores a multifaceted approach to enhancing cloud security through the integration of data encryption and dispersion techniques. Encryption serves as a foundational layer, mitigating the risk of unauthorized access by converting data into unreadable formats without the appropriate decryption keys. However, relying solely on encryption may not be sufficient, as a single point of compromise could potentially expose the entire dataset. To address this vulnerability, data dispersion techniques are introduced, which involve breaking down the encrypted data into fragments and distributing them across various cloud servers. This dispersion not only adds an additional layer of complexity for potential attackers but also reduces the risk of a single point of failure. The combined use of encryption and dispersion not only fortifies data security but also aligns with regulatory compliance requirements. This paper delves into the technical aspects, benefits, and potential challenges associated with implementing this integrated approach, offering insights into how organizations can bolster their cloud security posture in an increasingly interconnected and data-centric landscape. We study the additive application of data encryption and dispersion ways in this in-depth analysis of cloud security. A strong barrier against unwanted access is created by using dispersion to spread pieces over several servers and encryption to make data unreadable. The entire solution addresses the changing face of cyber threats while improving security and adhering to regulations. By carefully analyzing scientific details and possible obstacles, this paper provides useful data for business looking to improve their safety record in the ever-changing world of cloud computing.

Keywords: Cloud Security · Secure Storage · Encryption · Dispersion · Data Protection · Cloud Computing · Cyber security · Hash Key Management · Data Integrity

1 Introduction

Since cloud infrastructures offer unmatched scalability, accessibility, and cost-efficiency, moving key data to them has become a common practice in the dynamic world of modern data management. But the move to cloud storage has created a whole new set of security

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Analysis and Prediction of Crime Hotspots Using Machine Learning with Stacked Generalization Approach

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Abstract. The ensemble learning approach is a cooperative decision-making system that generates new examples by combining the predictions of learnt classifiers. The early analysis has demonstrated that the ensemble classifiers are far more reliable than any single part classifier, both conceptually and experimentally. Even with the presentation of multiple ensemble approaches, determining the right configuration for a given dataset remains a challenging process. The goal of crime prediction is to discourage criminal activity and lower the crime rate. This paper presents the assemble-stacking based crime prediction method (SBCPM), an authentic and efficient approach based on algorithms for determining the right crime predictions. Learning-based methods are applied to achieve domain-specific configurations that are compared with another machine learning model. The ensemble model that has the highest correlation coefficient and the lowest average and absolute errors sometimes performs better than the other models. On the test set, the suggested approach produced accurate classifications. It was discovered that the suggested method was helpful in forecasting potential crimes and imply that the ensemble model's prediction accuracy is greater than the individual classifier's.

Keywords: Decision tree · Gradient Boosting · Machine Learning techniques · Random Forest.

1 Introduction

We have to look for more advanced techniques for comprehending and foreseeing criminal conduct since maintaining public safety in our communities is a constant problem. To find places with comparable patterns or features, this may include utilizing geographical data and past crime incidences [1]. Although statistical methods and historical data have enabled traditional crime analysis to provide light on patterns and hotspots, it frequently fails to effectively convey the complexity of contemporary criminal trends. There are three main places where these constraints are evident. First off, because crime

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Cloud Secrecy: Techniques for Improving Data Security and Protection in Cloud Capacity

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Abstract. The blast of information that has been delivered as a result of technologies such as the Web of Things (IoT), savvy cities, and digital changes has driven a rise within the capacity industry that has seen huge extensions. The Web of Things (IoT), smart cities, and advanced changes have all contributed to an increase in the number of modern manifestations, which in turn has quickened the expansion of the capacity of commerce. An expanding number of individuals, enterprises, and governments are moving their information to the cloud in order to make strides in productivity and openness. As a result, cloud capacity frameworks have become a fundamental component of the cutting-edge world. There are many dangers associated with this process, including the possibility of information leakage, invasion of privacy, and unauthorized access. The purpose of this theory is to collect different information regarding security measures, protection and access.

Keywords: Storage · Data Security · Encryption · Access Control · Privacy Assurance

1 Introduction

A quick look at the current usage of the cloud shows that the market is characterized as one where everything is chosen and changed rapidly. More and more companies across industries rely on cloud performance to reduce infrastructure costs, improve communications and streamline processes [1]. The agility, adaptability and benefits of cloud performance are accelerating the transformation of businesses from small businesses to large enterprises. However, advancement in usage has led to many unresolved concerns, especially regarding the security of data stored in the cloud [2]. Addressing key issues of vulnerability and mitigating risks associated with the security and protection of information in cloud storage is the focus of our research [3]. Despite advances in cryptographic innovation and compatibility.

This study is about points to help build up viable information resource security plans by recognizing best practices, assessing unused technologies, and evaluating administrative prerequisites. Cloud capacity, which is built on a virtualization framework, offers

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LoanPredictor: A Streamlit Application for Interpretable and Fair Loan Approval Predictions

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Abstract. LoanPredictor is an innovative Streamlit-based application designed to predict loan approval outcomes with a strong emphasis on interpretability and algorithmic fairness. Leveraging advanced machine learning models, the system provides transparent explanations for its decisions, enabling users and stakeholders to clearly understand the key factors influencing loan approvals. The application integrates fairness-aware algorithms to actively minimize biases, ensuring equitable treatment across sensitive attributes such as income, marital status, and gender. Through a streamlined, user-friendly interface, individuals can input their personal and financial data to receive accurate and comprehensible predictions. Built on Streamlit, the platform supports intuitive user interaction and rapid prototyping. By embedding ethical AI principles into the loan evaluation process, LoanPredictor empowers financial institutions to adopt transparent, fair, and responsible decision-making practices—ultimately transforming traditional lending into a more inclusive and accountable system.

Keywords: Loan Predictor · Streamlit App · Interpretability · Fairness · Transparent insights · Ethical lending practices

1 Introduction

In an increasingly dynamic financial landscape, there is a growing demand for fairness and transparency in the loan approval process. As financial institutions and consumers alike grapple with issues related to equity, several technologies have emerged that offer decision-makers trustworthy resources for making more informed and equitable choices. Among these innovations is LoanPredictor, an inventive and user-friendly Streamlit application designed to predict loan acceptance decisions while prioritizing fairness and interpretability.

LoanPredictor harnesses the power of robust machine learning models, including Random Forest, K-Nearest Neighbors (KNN), Support Vector Machine (SVM), and Logistic Regression, to navigate the complexities of loan approval criteria. These models facilitate a deeper understanding of the factors influencing loan decisions, offering a more

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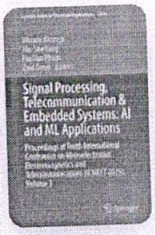
Rating Prediction of Google Play Store Apps by Using Machine Learning

| Conference paper | First Online: 27 March 2026

| pp 282–290 | Cite this conference paper



Signal Processing, Telecommunication & Embedded Systems: AI and ML Applications

(ICMEET 2025)

K. Karpagavalli ✉, Daruru Sarika, Y. Mahanandi, D. Subhash Chandra Mouli & V. Sathyendra Kumar

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Abstract

In the dynamic landscape of the Google Play Store, predicting app ratings remains a critical yet challenging endeavour. This study focuses on advancing the accuracy of rating predictions through the application of machine learning algorithms, specifically Support Vector Machines (SVM), and Gradient Boosting. These algorithms are chosen for their unique capabilities in capturing diverse patterns within the vast array of app data.

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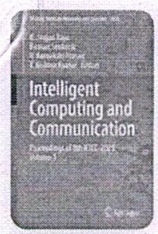
Advancing Brain Tumor Classification Using the Explainable CerebriNet Model

| Conference paper | First Online: 01 April 2026

| pp 57–64 | Cite this conference paper



Intelligent Computing and Communication

(ICICC 2025)

H. N. Lakshmi, B. Rupa Devi, T. Harikala, G. Ramakrishna, Penubaka Balaji & Malla Sudhakara

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Abstract

Multi-level brain tumor identification stands crucial for medical image diagnostics as it enabled clinicians to deliver exact diagnosis and treatment development. The research presents CerebriNet as an explainable deep learning framework which executes multiclass brain tumor classification by analyzing MRI scans. CerebriNet demonstrates exceptional accuracy of 99.24% in classifying four categories: glioma, meningioma, pituitary tumors, and non-tumorous cases. The interpretability abilities represent a main advantage of CerebriNet. Internal brain regions where tumors exist that shape predictions

Hybrid Quantum–Machine Learning Framework for Precision Farming : Optimizing Crop Yield and Profitability

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***Abstract*—** This paper introduces a hybrid machine learning and quantum, inspired framework for the prediction of crop yield and profit in precision agriculture. The presented system combines classical machine learning models with quantum, inspired learning such that the model's predictability and generalization can be increased. Random Forest regressors are employed to estimate crop yield and economic profit, thus providing a stable and reliable baseline for the performance. Quantum Kernel Ridge Regression and a Variational Quantum Circuit have been added to this framework as corrective components to enhance the model's generalization. The proposed technique involves methodical data preprocessing: categorical attributes are encoded (soil type, season, crop name, and disease status), and numerical features are scaled (rainfall, nutrient level, fertilizer usage, and cultivated area). Instead of using image, based disease detection methods, disease condition is considered as a structured input feature and is merged with the yield and profit estimation process. The quantum-inspired module, which is implemented with Qiskit, employs Principal Component Analysis for reducing dimensions and utilizes a ZZFeatureMap to encode quantum features to construct quantum kernels. By providing an effective framework for data-driven agricultural decision support, the current system is deployed via an interactive Streamlit application for dataset uploading, model training and prediction, and visual analysis through correlation heatmaps and yield-profit trend plots. Experimental results have shown that a hybrid integration of classical machine learning and quantum- inspired methodology could enhance predictability, interpretability, and practical usability, thus offering this framework suitable for data-driven agricultural decision support.

Keywords— Machine Learning, Quantum Computing, Crop Yield Prediction, Random Forest, Kernel Ridge Regression, Qiskit, Agricultural Forecasting, Hybrid Models.

I. INTRODUCTION

Agriculture continues being the backbone of the global economy; it is a fact that the correct estimation of crop yield and economic profit is important in both food security and the utilisation of resources, which aims to improve farmers' income [1]. The complex interaction among agronomic parameters such as type of soil, seasonal variation, nutrient availability, and other environmental factors could not be captured by state-of-the-art traditional predictive approaches. Despite machine learning enhancing agricultural forecasting tremendously, the increased complexity and dimensionality of agricultural data demand more advanced and adaptive modelling strategies [2]. In light of this, a proposal is made for an integrated hybrid machine learning and quantum-inspired crop prediction framework that combines classical learning models with quantum-inspired computation to enhance its accuracy, interpretability, and adaptability, which is proposed in. Overviewing the architecture of the presented system, the model develops stable baseline predictions regarding the estimation of crop yield and profit, utilizing Random Forest regressors. In order to improve generalization, a Quantum Kernel Ridge Regression module is added, implemented by using Qiskit along with a ZZFeatureMap to make corrective adjustments in the learned feature space.

Further, categorical and numerical inputs include:

- soil type, season, crop name, and disease status; and
- rainfall, fertilizer usage, nutrient levels, and area cultivated.

The proposed method avoids disease detection through image processing. Instead, disease condition is made a structured input feature in the prediction pipeline [3]. Accordingly, implementation via Streamlit allows for dataset upload, model training and prediction, and visual analysis by way of correlation heatmaps, scatter plots of yield-profit, and trends in fertilizers-yield. This indicates the practical feasibility of the proposed hybrid framework that integrates classical machine learning with quantum-inspired techniques in view of enhancing data-driven agricultural forecasting.

II. PROBLEM DEFINITION

Modern agriculture inherently suffers from the persistence of challenges in the prediction of crop yield and economic profit, as agronomic factors like soil conditions, climatic variability, nutrient availability, and type of crop are intricately linked and complexly interact. Further, agronomical processes develop nonlinear causality in dynamic systems that make forecasting quite uncertain using conventional analytical methods. Though machine learning-based Random Forests and Support Vector Machines improve the accuracy of prediction over traditional approaches, most of them suffer from scalability, real-time responsiveness, and the capability to capture implicit dependencies within heterogeneous and high-dimensional datasets of agriculture [4]. Most of the existing forecasting frameworks basically center on classical learning

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A Next-Generation Hybrid TCN–Transformer Encoder Deep Learning Framework for Robust and Interpretable Climate Vulnerability Index Prediction in India

Publisher: IEEE Cite This PDF

Jakka Vidyadhari ; V. Sathyendra Kumar All Authors

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Abstract:
Climate change continues to intensify socioeconomic risks across India, making accurate prediction of the Climate Vulnerability Index (CVI) essential for proactive planning and resilience building. Existing deep learning approaches such as LSTM, Bi-LSTM, GRU, Transformers, and Autoencoders capture temporal patterns but often struggle to model long-range dependencies and multi-indicator interactions simultaneously. To address these limitations, this paper proposes a next-generation hybrid deep learning framework that combines a Temporal Convolutional Network (TCN) with a Transformer Encoder for high-precision CVI forecasting using multivariate climate, environmental, and socio-economic indicators from the NITI Aayog NDAP platform. The TCN component effectively captures temporal hierarchies and long-distance patterns through dilated causal convolutions, while the Transformer Encoder leverages multi-head self-attention to learn complex cross-indicator relationships and interpret feature contributions. Experimental results demonstrate that the proposed hybrid model significantly outperforms traditional recurrent architectures, achieving an RMSE of 0.052, an MAE of 0.031, and an R^2 score of 0.47, highlighting superior stability and predictive power. The framework provides decision makers with a reliable tool to identify emerging vulnerability hotspots and design targeted climate adaptation strategies across India.

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Scalp psoriasis is a persistent inflammatory skin condition that is often confused with dandruff or seborrheic dermatitis because of their similar visual appearance. This makes early diagnosis difficult, especially in settings where dermatologists are not easily accessible. Most existing automated systems focus only on image classification and do not consider the patient's clinical symptoms, which reduces their diagnostic reliability. To address this limitation, this study proposes a multimodal deep learning framework that jointly analyzes scalp images and structured clinical features for automated psoriasis detection and severity prediction. The model integrates a CNN-based image encoder, a clinical-feature encoder, and a Grad-CAM module to highlight affected scalp regions. During evaluation, the proposed system achieved an overall accuracy of 96.42%, with strong regression performance for severity scoring, obtaining a Mean Absolute Error (MAE) of 0.11, a Root Mean Squared Error (RMSE) of 0.18, and an R^2 score of 0.94. These results show that combining image features with patient-specific clinical information significantly improves diagnostic stability and severity estimation. The proposed framework provides a practical and interpretable solution for computer aided scalp psoriasis screening and may support real-world dermatology decision-making.

Published in: 2026 International Conference on Computing, Communication, Control and Cyber-Physical Systems (I5CPS)

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Conference Location: Karaikal, Puducherry, India

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Classification of Psoriasis Using Vision Transformer: A Deep Learning-Based Approach

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RESEARCH ARTICLE | APRIL 08 2026

Scalable convolutional neural network model for early pneumonia detection

P. Swathi; Y. V. S. Ganesh; G. T. Lakshmi; M. Sravani; A. Venkatesulu

+ Author & Article Information

AIP Conf. Proc. 3376, 040005 (2026)

https://doi.org/10.1063/5.0330247

Manual chest X-ray processing might pose difficulties in the prompt and accurate identification of pneumonia, a potentially fatal lung infection. In order to overcome this, we suggest an automated model for the diagnosis of pneumonia that makes use of Convolutional Neural Networks (CNN) and data augmentation methods to enhance generalization. The model architecture consists of five Conv2D layers, which are implemented by MaxPooling for extraction of features. The binary classification is handled by an Artificial Neural Network (ANN) that has two hidden layers and an output layer that is activated by a sigmoid. For non-linearity, the hidden and Conv2D layers employ ReLU, and effective training is ensured by the Adam optimizer using binary cross-entropy loss. The model obtained an accuracy of 98.16%, validation accuracy of 100%, as well as test accuracy of 92.15%. Furthermore, streamlit was used to create an intuitive user interface that provides early pneumonia identification in addition to advice on preventative measures, treatments, and dietary suggestions.

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RESEARCH ARTICLE | APRIL 08 2026

Intelligent detection of behavior-based intranet attacks using machine learning techniques

P. Swathi ✉; E. Madhu; K. Maheswari; R. Kumar; P. Kalyani

+ Author & Article Information

AIP Conf. Proc. 3376, 040008 (2026)

https://doi.org/10.1063/5.0330248

Within the realm of cybersecurity, the identification of intranet attacks presents itself as quite a problem due to the dynamic frameworks of malicious activities. This paper outlines a more developed method for the use of ML for detecting intranet based behavior-based attacks. This is the reason why the authors of the proposed approach use machine learning algorithms to find out intranet attacks based on their behavior. By monitoring the network traffic and system logs, the model is able to identify deviation from normative behavioural patterns and prodivity to pattern of threats to the network. The proposed approach therefore gives a novel directions for improving the security architecture of intranet environment by enabling real-time detection as well as deployment of adaptive security measures. The overall success of this approach is substantiated by empirical assessments and comparisons, and promoted as a supplement to the existing cybersecurity standards and as means to strengthen the intranet security against the growing threats.

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RESEARCH ARTICLE | APRIL 08 2026

Innovative web framework for cervical cancer detection using machine learning

P. Swathi ; P. Govardhan Reddy; B. Deepthi; D. Chindu; S. Adil

+ Author & Article Information

AIP Conf. Proc. 3376, 040009 (2026)

https://doi.org/10.1063/5.0330249

— This research introduces a pioneering A web framework designed for cervical cancer diagnosis utilizing powerful machine learning algorithms. Leveraging a comprehensive dataset encompassing demographic and medical history attributes, including age, sexual behavior, contraceptive usage, and medical diagnoses, our framework integrates AdaBoost, XGBoost, stacking classifier, and logistic regression models. These models are orchestrated to enhance diagnostic accuracy and reliability. The framework aims to streamline early detection and intervention processes crucial for improving patient outcomes in cervical cancer management. Through systematic evaluation and comparative analysis of these algorithms, our study underscores their efficacy in predictive modeling for cervical cancer, marking a crucial step in leveraging machine learning for healthcare improvements.

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Enhancing Microservice Performance: A Hybrid Approach using Caching and Batching Techniques

Publisher: IEEE Cite This PDF

P. Santhosh Kumar ; T. Naresh ; K Vinod Kumar ; N. Ramesh Babu ; K.Hari Babu ; S.Riyaz Banu All Authors

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IV. Results Discussion

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Abstract:
Nowadays, microservices play a major role in industries by enabling modular and scalable software design through inter-service communication. However, traditional communication methods—typically involving JSON-based API calls—can lead to high latency, increased network traffic, and redundant database queries. These inefficiencies become more prominent when services repeatedly request the same data or make multiple small API calls rather than batched requests. To address these issues, this paper explores two key optimization techniques: caching and batching, along with their combined effect. The objective is to analyze how these techniques individually and together improve performance in microservice-based systems. We conducted experiments under four scenarios: no optimization, caching only, batching only, and caching combined with batching. The implementation was carried out using Spring Boot, Redis for caching, and JPA for batch data access. The results demonstrate that caching alone reduces response time by up to 98.31%, batching alone by approximately 86.97%, and the hybrid approach of caching with batching offers consistent low latency with minimal database load. This confirms that a combined caching and batching strategy provides the most efficient and scalable solution for optimizing inter-service communication in microservices.

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DOI: 10.1109/ACOIT66109.2025.11436425

Date Added to IEEE *Xplore*: 20 March 2026

Publisher: IEEE

ISBN Information:

Conference Location: KOLAR, India

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RESEARCH ARTICLE | APRIL 08 2026

Classifying social media posts using machine learning and natural language processing

Mahammad Rafi Shaik; Naseema Shaik;
Supraja Madury Velagacharla; Vamshi Doddeppa;
Sowjanya Lakshmi Thallam; Syam Sai Pesala; Uday Bylla

+ Author & Article Information

AIP Conf. Proc. 3376, 020008 (2026)
https://doi.org/10.1063/5.0330316

Effective sentiment analysis of social media data becomes possible by the combination of machine learning algorithms with natural language processing (NLP) techniques. This is because social media platforms such as Facebook and Twitter produce enormous volumes of unstructured text. This research uses sophisticated natural language processing (NLP) techniques for text processes and classification, including data collection, preprocessing, and transformation, to address sentiment extraction difficulties. Tokenization, stop-word removal, lemmatization, and Term Frequency-Inverse Document Frequency (TF-IDF) are important NLP techniques that transform text into structured representations.

For sentiment classification, conventional machine learning models such as logistic regression, Random Forests, Support Vector Machines (SVM), and Naive Bayes are used. Accuracy, precision, recall, and F1-score are used to assess the model's performance; an accuracy rate of 85–90% is expected. Techniques like feature engineering and hyperparameter optimization are also used to improve performance. The project's ultimate goal is to create a scalable, effective real-time sentiment analysis system that offers researchers and enterprises useful information.

RESEARCH ARTICLE | APRIL 08 2026

UCS: Unified chatbot solution for university payments, enrollment, exam schedules, and results

Mahammad Rafi Shaik ✉; Naseema Shaik; M. Rukmin; T. Satwika; B. Prathap; A. Sai Vardhan

+ Author & Article Information

AIP Conf. Proc. 3376, 020010 (2026)

https://doi.org/10.1063/5.0330315

This initiative aims to help Annamacharya Institute of Technology and Sciences students seeking a degree in software engineering who have trouble finding timely information about enrolment, tuition costs, exam dates and results, and university events. We suggest a chatbot approach that combines natural language processing (NLP) and machine learning (ML) technologies to address this. By providing answers to commonly asked queries and enabling access to crucial academic procedures including payment enquiries, exam schedules, and result notifications, the chatbot is intended to help students.

A full chatbot management platform will be introduced in this project, allowing administrators to monitor and update in real time. In order to facilitate smooth integration with platforms that students regularly use, a neural network model will also be installed on a cloud server, improving the system's usability and effectiveness. Metrics including user happiness, successful query completion, and user registration time will be measured in order to assess the system's usability and performance. It is anticipated that initial evaluations would show high levels of satisfaction, especially with regard to system confidence, accuracy, response speed, and ease of use. The chatbot has the potential to be an essential tool for enhancing how students engage with the digital systems of the university.

Attention-Augmented Multi-Scale CNNs for Robust Plant Leaf Disease Detection and Classification

Publisher: IEEE Cite This PDF

K. Keerthi Naidu ; P. Venkata Deepthi ; M. Sohail ; N. Vinay ; A. Sreevalli ; P. Changamma All Authors

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Abstract:
The growing influence of plant diseases on agricultural productivity becomes a major threat to the food security of the world. Traditional methods of identifying plant diseases of leaves are time consuming, prone to mistakes and overwhelmingly dependent on the knowledge of experts to make a decision. In this project, an Attention-Augmented Multi-Scale Convolutional Neural Network (CNN) deep learning-based method for automated detection of plant diseases is proposed. The model combines multi-scale feature extraction with channel and spatial attention, which can better learn discriminative feature representations from leaf images. Multi-scale convolutions are adopted which learn both the small-scale and large-scale disease patterns, and the Squeeze-and-Excitation (SENet) and the Convolutional Block Attention Module (CBAM) are taken into account which make the network only pay attention to the leaf regions via the veins, edges, and infected spots, and decrease the background noise interference. Images are preprocessed with the background removal and augmentation techniques to improve generalization. A notable fact is that performance of the proposed architecture outperforms the traditional CNN models in terms of significant enhancements in classification accuracy and classification robustness. The implementation for the system is TensorFlow & Keras AI framework using GPU accelerated Colab environments for fast convergence of the system. Using the help of a Streamlit-based web app for real-time prediction of diseases, users can upload leaf images and can get the instant diagnosis. The presented end-to-end system shows how attention-augmented networks play a major role in aiding early disease detection in precision agriculture for sustainable crop management and mitigation of economic losses.

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Date Added to IEEE *Xplore*: 04 March 2026

Publisher: IEEE

ISBN Information:

Conference Location: Goathgaun, Nepal

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Retracted: Optimizing Air Quality Prediction in Smart Cities Using Hybrid Deep LSTM Network Models

Publisher: IEEE Cite This PDF

G S Nagalakshmi ; V M Periyasamy ; Pvs Siva Prasad ; Vijaya Sagvekar ; Saurabh S Joshi ; Sanjeev Puri All Authors

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Retraction: This article was retracted on 23 October 2026.

Abstract:
A city's ability to control its population and industrial activity is highly dependent on its air quality index. As the world gets more industrialised, keeping tabs on the air quality in cities is becoming more of a difficulty. Acid rain, climate change, cardiovascular illness, skin cancer, and other air pollution-related health problems have prompted international alarm, especially in the context of smart cities. There is a pressing need for accurate forecasting models since air quality prediction in smart cities has received a lot of attention from media outlets and weather platforms. Data preparation, feature selection, and training the model are the three stages that this research suggests. While a Correlation-based Feature Selection (CFS) method finds the most influential features, preprocessing guarantees high-quality input. At its heart is a genetically optimised Deep LSTM neural network, an evolution of classic RNNs that provides the predictive power. Compared to more traditional approaches, the suggested DLSTM model performs better in the experiments, as shown by the experimental findings. Its 99.60% forecast accuracy stands out, solidifying its position as a reliable solution for complicated urban air quality data. The results show that the model could be useful for smart city policy planning and air pollution monitoring.

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ISBN Information:

Conference Location: Chikodi, India

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Automated Sleep Disorder Detection Using Machine Learning and Deep Learning Model

Publisher: IEEE Cite This PDF

Policherla Changamma ; K. Keerthi Naidu ; Tokala Jhanu Kalyani ; Devulapalli Madhuri Reddy ; Peddakotla Kumar Reddy ; Anthati Karthik All Authors

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Abstract:
Sleep disorders, including insomnia, sleep apnea, etc. as significant issues of global health, and becoming more widely recognized, affecting psychological and physical health. While traditional such diagnostic techniques as polysomnography (PSG) offer precision. they are not easily, costly, and time-consuming results. Accessible. This paper proposes a solution to these problems. Hybrid ensemble framework improving with Machine Learning (ML), and Deep Learning (DL) methods of automated sleep disorder. Detection. It is based on the data of behavioral lifestyle and. physiological ECG records to deliver a comprehensive diagnosis. Gradient Boosting (GB) and Artificial Neural Networks (ANN) are. used in the analysis of lifestyle characteristics, Support Vector Machine. SVM models and CNN models deal with (SVM) and Convolutional Neural Network (CNN) models. ECG signal processing. Hyper parameters are adjusted with the help of. The outputs of each model and Genetic Algorithms (GA) are genetic algorithms. Integrated to come up with final predictions. The ensemble approach has higher classification performance than individual models and assists real time forecasting using a FastAPI web interface. This method is pointed out by the results of the experiment. The early solution to the lack of scalability, cost-effectiveness, and pragmatism. Identification of sleep disorders.

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Date Added to IEEE *Xplore*: 04 March 2026
Publisher: IEEE
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Conference Location: Goathgaun, Nepal

Recommended for You (Beta)

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Ensemble Deep Map-Learning System for Real-Time Underwater Image Improvement

Publisher: IEEE Cite This PDF

K. Sai Venu Prathap ; Nyamathulla Shaik ; Nadendla Sirisha ; Sudhir Ponnapalli ; Raghunadha Reddi Dornala ; Kambhampati Rama Gopala Krishna Murthy All Authors

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I. Introduction

II. Literature Survey

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IV. Advanced Filters for Noise Removal

V. Deep Convolutional Enhancement: Proposed System

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Abstract:
Underwater image improvement is a complex task that is affected by light occlusion, scattering, and wavelength distortion in aquatic environments. In this paper, an Ensemble Deep Map-Learning System (EDMLS) is presented that increases the quality of real-time underwater images. The proposed EDMLS uses white balancing, histogram equalization, and dehazing filters, along with a deep convolutional enhancement system that refines color mapping, texture details, and illumination balance. The proposed system first refines the physical fluctuations using specialized techniques and integrates them with convolutional layers, resulting in high image quality. The final layers of the proposed approach include residual learning and attentionbased fusion layers to improve spatial color features, thereby mitigating the effects of traditional colors. Experiments are conducted on benchmark datasets, yielding significant results. The proposed approach achieves high performance across several metrics compared with existing models.

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Improved Traffic Sign Detection with ECA Attention and Augmentation

Publisher: IEEE Cite This PDF

Nyamathulla Shaik ; Shashavali Dodiyam ; Padmaja Vemala ; Pallavi Ragula ; Prakash Rao Chagalamarri All Authors

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Abstract:
Traffic sign detection plays a vital role in Intelligent Transportation Systems (ITS) and Unmanned Vehicles (UVs), as it enables machines to perceive and interpret the road environment for safe and autonomous navigation. Accurate classification of traffic signs enhances driving safety, eliminates human dependence, and strengthens the decisionmaking capability of Advanced Driver Assistance Systems (ADAS). While traditional deep learning models such as YOLOv3 and YOLOv7 have shown strong performance in detecting and localizing road signs, they are often affected by challenges like lighting variations, motion blur, and adverse weather conditions. Moreover, existing attention mechanisms like Squeeze-and-Excitation (SE) introduce additional computational overhead. To address these limitations, the proposed study introduces an improved Traffic Sign Detection model based on YOLOv8, integrated with Efficient Channel Attention (ECA) and advanced data augmentation techniques. The system enhances generalization through synthetic weather degradation, varied intensity, and motion blur effects. Replacing SE with ECA significantly reduces inference time and model size without compromising accuracy. Trained with the AdamW optimizer and a Cosine learning rate scheduler, the model achieves an impressive mAP of about 99% at 0.5 IoU on the German Traffic Sign Detection Benchmark (GTSDB), surpassing baseline results in both accuracy and speed. Its lightweight and robust architecture ensures scalability, efficiency, and real-time performance, making it ideal for embedded automotive applications.

Published in: 2026 7th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI)

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Fuzzy–Decision Tree Model for Online Fraud Detection Using Psycholinguistic and Personality Features

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K. Pushpa ; N Sunil Kumar ; Sreenivas Madupu ; Anuradha Parasar ; A. Bharathi ; S. Mohanasundaram All Authors

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Abstract:
External risks can be detected and countered using existing methods, while internal threats, such as those posed by hostile insiders, remain unmonitored. Attacks from inside the organisation are more dangerous than those from outside because insiders have more legal access, more knowledge of how the business runs, and the ability to sneak up on weaknesses. This project aims to uncover instances of online fraud by utilising psycholinguistic and computational methodologies. A combination of dimensionality reduction, feature mining, and normalisation is employed by the suggested strategy to pinpoint the most effective classification features. Principal Component Analysis (PCA) is used to quickly extract features before change detection. Fuzzy decision trees form the basis of a fuzzy random forest method that use the General Membership Function Model for Fuzzy Sets (GMFMFS). Using nearly perfect fuzzy sets, this method finds and forecasts credit risk. It can also change GMFMFS-based linear membership functions to nonlinear ones without doing any extra maths, which is a great bonus. The suggested method significantly outperforms state-of-the-art models in online fraud detection systems, with experimental findings showing a 96.32% improvement in insider threat prevention.

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CNN-Based Framework for Real-Time Skin Cancer Classification Based on Medical Images

Publisher: IEEE Cite This PDF

Sreenivasulu Meruva ; Balaji Chanda ; Chinna Maddi Pothuganti ; Aditya Mutyala ; Bhuvana Chandra Reddy Sajjala All Authors

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Abstract:
Skin cancer has been one of the major health issues all over the world, and timely and proper diagnosis is vital in treating the ailment. Conventional methods of diagnosis that are based on manual dermoscopic examination are laborious and have high chances of error. In this paper, a lightweight Convolutional Neural Network (CNN) framework has been developed to classify skin cancer in real-time on a dermoscopic dataset, the HAM10000. The model proposed uses optimized convolutional layers, batch normalization and dropout regularization to ensure a tradeoff between efficiency and accuracy. Extensive preprocessing, which includes hair artifact rejection, hair augmentation and class balancing, improves the quality of data. The framework is able to classify seven types of lesions with an accuracy of 99.61 % which is much more than heavy ensemble frameworks but can still be deployed on devices with limited resources. The strategy shows a high possibility of affordable, AI-based, dermatological screening in the clinical and mobile setting.

Published in: 2026 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)

Date of Conference: 06-07 March 2026

DOI: 10.1109/ICETEMS66917.2026.11469683

Date Added to IEEE *Xplore*: 14 April 2026

Publisher: IEEE

ISBN Information:
Electronic ISBN:979-8-3315-9383-4
Print on Demand(PoD) ISBN:979-8-3315-9384-1

Conference Location: Nagpur, India

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YOLOv8-Based Intelligent Traffic Sign Recognition in Autonomous Driving

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Adaptive Multi-Modal Fusion for Accurate Cardiovascular Risk and Heart Failure Detection Using Transformer Architectures

Publisher: IEEE Cite This PDF

M. Sreenivasulu ; S. Sabeel ; Y. Naga Sai Ganesh ; K. Ramanandin ; E. Reddy Siva Lakshmi All Authors

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Abstract:
CVDs are one of the most common causes of death in the world, and there is a need to provide the most accurate and timely diagnosis tools. The current paper is an overview of a multi-modal deep learning architecture that combines ECG images, physiological measures and patient metadata to conduct a thorough cardiovascular analysis. The system uses DenseNet121 in extracting spatial ECG feature and transformer-based encoders in modeling temporal and clinical dependencies. A correlation-sensitive oversampling algorithm is proposed to solve the problem of uneven classes and a weighted fusion system is used to merge the modality-specific embeddings to make predictions in multi-task prediction. The experimental results show a very high performance with accuracy, precision, and AUC of the ECG classification being 99.29, 99.32, and 99.96, respectively, and cardiovascular risk and heart-failure prediction. The suggested model provides a clinically flexible, and scalable automated cardiovascular screening.

Published in: 2026 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)

Date of Conference: 06-07 March 2026

DOI: 10.1109/ICETEMS66917.2026.11469689

Date Added to IEEE *Xplore*: 14 April 2026

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Deep Learning Methods of Unstructured Data Integration and Analysis to Optimize Decision Making and Database

Publisher: IEEE Cite This PDF

Ainomugisha Maxima ; Maninti Venkateswarlu ; Majid Saleem ; S. Naveen Kumar ; Tella Prameela ; Bala Gangadhara Gutam All Authors

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Abstract
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Abstract:
The integration of unstructured information in a Relational Database Management System (RDBMS). Companies that want to exploit the use of unstructured data in their decisionmaking processes find it a great challenge to exploit them due to the large amounts and forms that such form of data takes. This study presents a novel integration framework combining Optical Character Recognition (OCR) with advanced deep learning models-specifically Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM)-to facilitate the incorporation of unstructured data into Relational Database Management Systems (RDBMS). Unstructured data, due to its diverse formats and volume, poses challenges for traditional RDBMS, which are optimized for structured inputs. To address these limitations, this research develops a classification-driven model capable of automatically extracting and structuring data from scanned documents such as receipts and invoices. The hybrid CRNN-BiLSTM architecture significantly enhances recognition accuracy, increasing performance from 83.2 % to 94.6 %, with corresponding gains in precision, recall, and F1-Score. The model was validated through a rigorous data science methodology encompassing data collection, model training, testing, and evaluation. These results demonstrate the model's effectiveness in transforming unstructured documents into structured formats, enabling improved decision-making and database performance. The study encourages future exploration into additional deep learning enhancements, model scalability, and cross-domain applicability.

Published in: 2025 IEEE Pune Section International Conference (PuneCon)

Date of Conference: 12-14 December 2025

DOI: 10.1109/PuneCon67554.2025.11378885

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A Systematic Review of Machine Learning Approaches for Predicting University Student Graduation Based on Educational Outcomes

Publisher: IEEE Cite This PDF

S. Naveen Kumar ; Yammanoor Nithya ; Koneti Mounika ; Rameti Sai Lakshmi ; Tiruveedhula Pavani All Authors

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Abstract:
Forecasting student graduation outcomes using machine learning (ML) provides valuable insights for enhancing educational success and institutional decisionmaking. This study conducts a comprehensive systematic review of seventy peer-reviewed journal articles published between 2024 and 2025 that examine ML-based models for predicting university student graduation. The review categorizes key algorithms, datasets, evaluation methods, and research trends. Learning Management System (LMS) and Student Information System (SIS) data-particularly academic performance, behavioral patterns, and retention metrics-are identified as the most common predictors. Among the evaluated algorithms, Support Vector Machines (SVM) and Random Forests (RF) dominate due to their accuracy, scalability, and interpretability, achieving performance levels up to 90 %. The study also highlights critical challenges, including limitations in data quality, insufficient model generalization across institutions, and inadequate attention to ethical and privacy issues. Furthermore, the limited exploration of ensemble and explainable AI models restricts broader adoption in real-world educational environments. To address these gaps, the review emphasizes the need for adaptive, interpretable, and ethically aligned ML systems that integrate diverse data sources and cross-disciplinary perspectives. Future research should prioritize model transparency, fairness, and transferability to diverse learning contexts. Overall, this review establishes a foundation for developing robust, data-driven earlyintervention systems that can identify at-risk students, personalize learning experiences, and ultimately improve graduation rates in higher education.

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Ensemble Quantum Key Distribution Framework for Practical Secure Communication Networks

Publisher: IEEE Cite This PDF

Policherla Changamma ; V. Srilakshmi ; Sudhir Ponnapalli ; Raghunadha Reddi Dornala ; Harish Aditya Ananda Rao ; Kambhampati Rama Gopala Krishna Murthy All Authors

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II. Literature Survey

III. Advanced Learning Approach (ALA) Is combined with the Quantum Key Distribution Framework

IV. Dataset Description

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Abstract:
Quantum Key Distribution (QKD) is a significant tool for securing communications by generating and sharing encryption keys between two parties, thereby preventing unauthorized access to data. QKD strengthens security by using the laws of physics to prevent attacks on data. Many issues have been identified with the existing quantum computing mechanisms. In this paper, an Advanced Learning Approach (ALA) is introduced to learn the security threats in the networks. Several issues are solved by integrating QKD with a Reinforcement learning (RL)-based Proximal Policy Optimization (PPO) model, which is used to refine key generation, correct errors, and detect intrusions in quantum-based channels. The proposed approach was applied to the QKD Channel Simulation Dataset (BB84 Protocol) to assess its effectiveness. Result shows that the proposed approach achieves high performance in Eavesdropping Detection Accuracy (%), Channel Efficiency (%), and Computational Overhead (ms), demonstrating its effectiveness against eavesdropping attacks. This study primarily provides high security across various environments that support real-time analysis.

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Dynamic ML-DL Switching for Smart City Traffic Forecasting Using Predictive–Adaptive Decision Algorithm

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Abstract:
With the growing of smart cities, more and more attention has been paid to intelligent traffic forecasting systems that are responsive in real time and can make accurate prediction. Standard approaches depend either on light ML models for fast local inference or DL networks for robust multi-step forecasting. However, static dependence on a single paradigm sacrifices between latency, energy and quality of prediction. To tackle this problem, we present new PredictiveAdaptive Decision Algorithm (PADA) that changes dynamically between ML-based edge prediction and DL-based off-site forecasting for smart IOT-supported traffic systems. The proposed algorithm aims to optimally make decisions considering confidence score, network latency, energy level and task difficulty by using the reinforcement learning technique. Extensive experiments on large scale smart traffic datasets show the effectiveness and efficiency of PADA in improving overall forecast accuracy and saving energy cost, inference delay, which is promising for real-time management in smart cities.

Published in: 2026 3rd International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS)

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Enhancing Predictive Cybersecurity Analytics Through the Convergence of Machine Learning and Generative AI

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Subhash Chandra Mouli D ; Mahammad Sohail Mulla ; Kunnanan Reddy Chittepu ; Mohammad Thoufik Shaik ; Jagan Mohan Byneni ; Bala Gangadhara Gutam

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Abstract:
Cyberattacks are dynamic and hence, it makes it. challenging to present-day protection strategies of networks, particularly in the context of new zero-day weak spots. and polymorphic invasions. Due to intrinsic dataset There are imbalances and lack of annotated instances of. atypical characteristics of attacks, machine learning as a matter of course. such complex threats are usually illusory to classifiers. A combination of predictive modelling and generative artificial. smarts will be proposed in order to address the limitations in this paper. By increasing the population of statistical minority classes nonparametric population of minority classes and retain statistical population. the methodology is effective in balancing the training set, validity. through the generation of realistic synthetic traffic data by the use of a Conditional Generative Adversarial Network. A deep neural network is then was trained upon this extended dataset with enhancement. ability to foresee risky behaviour patterns. We confirm the effectiveness. A deep neural network is then learned on this extended dataset enhancing its ability to. predict and identify hazardous patterns of behavior. We test the system in a range of intrusion conditions. to check the benchmark using the CIC-IDS2017. effectiveness of this process. Empirically this approach is said to be effective. investigation, the model obtains the classification precision of 98.5 percent, and at a traditional oversampling. methodologies, it enhances the rate of recall in a particularly infrequent attack to a significant degree. categories by 15%. These findings indicate the significance of. enriching generating statistics to enforce forecasting. countering systems to evolving harms of security.

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Interpretable Hybrid Machine Learning for Student Mental Health Screening

Publisher: IEEE Cite This PDF

Subhash Chandra Mouli D ; Durgaprasad Reddy Kovuru ; Pottypati Ganesh ; Shaik Asifa ; Koppala Dharani ; Pandurangaraju B. All Authors

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Abstract:
The article presents a model known as Interpretable Hybrid Machine Learning Framework of Student Mental Health Screening. The approach interconnects various standard machine learning models to ensure that the decision reached is clear and accurate at the end. The majority vote is made between Logistic Regression, Decision tree coupled with Random Forest- the vote will provide a better base prediction when compared with a single model. The construct can also enable screening of mental health issues in school or university early enough - classifying every student into one of several classes of severity of depression, anxiety plus stress. Prior to the training, the data are cleaned under two approaches: the categorical items such as academic level, gender, sleep quality and lifestyle are converted into numbers by label encoding. Numerical variables such as stress score, weekly time spent on studying, hours of screen time per day but also the number of hours spent asleep every night are scaled within the same range. The system will then include two tools; a ranked list of those features most strongly influencing the prediction and a concise set of if then rules that express the same information in natural language. Those counsellors that read the list and the rules in addition will be able to understand why the model arrived at its conclusion with a better insight than they would with the opaque DDNet network. The DASS-21 questionnaire is used to measure performance and other surveys of student mental health. The outcomes are presented in the form of a correlation heat-map or a confusion matrix.

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Cognitive Dialogue System for Medical Decision Support Using NLP and LLMs

Publisher: IEEE Cite This PDF

D Sarika ; K Karpagavalli ; Mogalapalli Aravind Reddy ; Thuggili Akanksha ; Dande Amrutha ; Alavala Hanumanth Reddy All Authors

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Abstract:
Intelligent conversational systems have provided improved access to initial healthcare data by using artificial intelligence. The present paper describes a multimodal AI-based medical chatbot that facilitates the interaction by text, voice, medical image, and document with pretrained models. The system is deployed based on a Flask backend and Google Gemini models to understand medical queries and the generated response via Groq-based large language inference and prominently the models. Voice response is supported by using Vosk speech-to-text and pyttsx3 text-to-speech. The chatbot keeps track of the history of conversation through the context management of its sessions thus allowing consistent follow-up replies. Gemini vision and Hugging face models are used to analyze medical images and documents. The system is fully based on real-time inference, which offers low-latency timely, caring, and thoughtful medical support.

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A hybrid machine learning and gamified framework for effective student engagement in a metaverse learning environment

Publisher: IEEE Cite This PDF

S.Adinarayana ; Daruru Sarika ; BVN Prasad Paruchuri ; K Yogeswara Rao ; U. Sesadri ; S.Hrushikesava Raju All Authors

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Abstract:
The shortcomings of traditional approaches in metaverse learning suffers in interactive learning, a lack of motivation, follow a one-size-fits-all style, poor long-term retention, and a static classroom. Moreover, these are difficult to scale to remote learners, etc. To overcome these challenges, metaverse learning is adopted, with immersive opportunities created, addressing technological and ethical concerns by embedding elements such as quests, rewards, real-time feedback, and virtual collaboration by integrating with gamification. To ensure improved education outcomes, the cognitive, emotional, and behavioral engagement features are focused among learners, resulting in. The gamification in metaverse learning, along with machine learning approaches such as Random Forest, LSTM, and Gradient Boosting, provides a transformative approach to modern education, aiming to enhance student engagement, motivation, and knowledge retention. This study motivates that gamified mechanisms within the Metaverse can influence students' cognitive, emotional, and behavioral engagement, whereas ML approaches enhance prediction analytics on engagement levels, and improve based on timely feedback. This study motivates developers and educators to use the metaverse to create dynamic, inclusive, and student-centered learning ecosystems. The domain metaverse, in which gamification would reshape the education system, with active learning promotion, and expand the use of the digital era and its interconnected means.

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Hybrid Deep Learning Framework for Precise Localization and Classification of Coffee Leaf Diseases

Publisher: IEEE Cite This PDF

Karpagavalli Komandoor ; Daruru Sarika ; Sravanthi Lebaku ; Chittiboyina Susmitha ; Venkata Durgeswar reddy Challa ; Atagani Uday Kiran All Authors

1 Cites in Paper
13 Full Text Views

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Abstract:
Coffee leaf diseases are caused by the infestation of fungi, bacteria, and pests are a significant threat to the health of crops and have a considerable impact on the quality of the yield. Visual inspection is the main diagnostic technique, which is slow, subjective, and ineffective for large-scale monitoring. In this study, a hybrid deep-learning framework is proposed, which incorporates the use of YOLOv8 as a tool to precisely localize the infected areas and MobileNetV2 as a tool to classify coffee leaf diseases in a fine manner. The first stage consists of disease-affected regions detected by YOLOv8, and the second stage consists of classifying the extracted Regions of Interest (ROI's) using a lightweight MobileNetV2 network. The framework was trained on real-world coffee leaf datasets across a variety of disease types with pre-processing methods such as re-sizing, normalization, augmentation, and balancing the number of classes to increase model generalization. As indicated by the experimental analysis, the two-stage approach based on the proposed research approach provides higher accuracy, faster inference, and better robustness than the standalone CNN models. The hybrid design has high prospects for real-time application in smart farming systems to detect diseases early and with high reliability.

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RESEARCH ARTICLE | APRIL 08 2026

Prioritizing weather and non-weather factors for improved flight delay predictions

Karpagavalli Komandoor; Navaneeth Annalamuni; Mounika Varimadugu; P. Nithesh Reddy; Mubeena Shaik

+ Author & Article Information

AIP Conf. Proc. 3376, 020009 (2026)

https://doi.org/10.1063/5.0330517

Predicting flight delays is essential to sensible airport management and necessitates taking into account a wide range of affecting factors. These variables are divided into weather-related (temperature, humidity, wind speed) and non-weather-related (day of the week, departure time) characteristics, vary in their impact on delays depending on weather conditions. In adverse weather, weather factors are the primary contributors to longer delays, whereas non-weather factors play a more significant role under normal conditions, often leading to shorter delays. For the first time, the priority information of weather and non-weather features is incorporated into a new flight delay prediction model that is based on a variation of the Random Forest algorithm. The significance of the features is evaluated using a clustering-based technique, dynamically adjusting the model according to prevailing weather conditions. The proposed model demonstrates substantial improvements in prediction accuracy and recall by embedding a probability-based feature selection mechanism. By prioritizing influential factors, the model enhances accuracy and recall, outperforming standard Random Forest implementations. This research highlights the challenges of optimizing feature selection probabilities and refining feature classifications. Future work will focus on incorporating advanced sources of data, including real-time flight tracking systems and meteorological remote sensing, to further enhance predictive

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A Dual Layer Predictive System for Cardiac Diseases Risk Evaluation Using Machine Learning Approaches

Publisher: IEEE Cite This PDF

Ramachandra Daggolla ; Sammilitha Netur ; Praveenkumar Reddy Gangarapu ; Sai Nikhitha Somagutta ; Srinishan Reddy Lebaku All Authors

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Abstract:
Cardiovascular diseases are among the leading causes of death worldwide, creating a critical need for accurate and reliable prediction tools that help identify those who may be at risk so that they can receive timely diagnosis and advice on how to prevent the disease. In this paper, the paper present dual-stage stacked machine learning approach to determining an individual's risk of developing cardiovascular disease using clinical data from numerous sources that provide diverse information about each patient. In the first stage, the authors train and validate several different types of classifiers using a number of different machine-learning algorithms. They also optimize the classifier's hyperparameters and compare their performances to determine which classifier has the best predictive performance, thereby identifying this classifier as the 'best performer,' which will then be revalidated in the second stage of the dual-stage stacked machine-learning methodology to produce ensemble stacking. They validate the results of the ensemble stacking on an independent dataset and find that they obtain the same results, thereby validating their methodology and finding that it provides a stable, secure method for predicting individuals' risk of developing cardiovascular disease. The paper conclude that their dualstage method of stacking classifiers provides accurate assessment of cardiovascular risk and will improve health care outcomes through proactive treatment.

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Abstract:
Tuberculosis (TB) remains a major global health challenge, necessitating rapid and precise detection for effective control. Traditional diagnostic methods— such as sputum microscopy, culture tests, and manual X-ray interpretation— are often slow, resource-intensive, and errorprone, limiting large-scale use. This study introduces a deep learning–based system employing chest X-ray images for automated TB detection. Using preprocessing techniques like resizing, normalization, and augmentation, a fine-tuned ResNet-18 CNN achieved exceptional accuracy (99.50%), precision (1.0), recall (99.39%), and F1-score (99.69%), demonstrating its reliability and scalability in aiding clinical diagnosis.

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MedFusion-OP: A Multi-Center Deep Learning Model for Accurate and Interpretable Osteoporosis Risk Prediction

Publisher: IEEE Cite This PDF

B. Naveen Kumar ; D. Revathi ; S. Supraja ; S. Praveen ; K. Siva Sankar All Authors

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Abstract:
"Osteoporosis", a chronic bone disease that deteriorates skeletal strength and poses an increase in "fracture risk", needs early and correct identification for successful intervention. The project combines "medical imaging and clinical parameters" to provide a complete diagnostic platform. The system combines a "hybrid deep learning strategy" using the "ConvNeXt-Tiny" architecture to analyze "X-ray images and tabular data" attributes like "age, gender, genetics, and weight". This "multi-input fusion" improves predictive accuracy by obtaining both "structural and physiological" markers of bone loss. The model categorizes osteoporosis severity into five levels—"Normal, Doubtful, Mild, Moderate, and Severe"—with clear risk stratification provided to clinicians. For transparency and clinical credibility, "SHAP (Shapley Additive explanations)" is utilized for explaining both image-based and tabular predictions, graphically highlighting the most important decision factors that affect model output. The system proposed in this work shows high accuracy and excellent generalization on a wide range of data centers, highlighting its potential for real-world application. By bringing together performance, interpretability, and clinical usability, "MedFusion-OP" takes a large step toward explainable, intelligent, and robust computer-aided diagnosis in "osteoporosis screening and risk estimation".

Published in: 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)

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B.V. Sai Thrinath ; G I K Durga Bhavani ; M. Ramprasad Reddy ; B. Meghya Nayak ; M. Venkatesh ; S. Usman Basha All Authors

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III. Controller Topology

IV. Simulation Results & Discussion

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Abstract:
This paper focuses on the design and implementation of a Proportional-Integral (PI) controller and an Artificial Neural Network-based Model Predictive Control (ANN-MPC) for controlling the electric vehicle's Synchronous Reluctance Motor (SYRM) drive. The primary objective is to evaluate and compare the performance of both control strategies in terms of efficiency, torque response, and energy consumption under varying driving conditions. The PI controller is selected for its simplicity and computational efficiency, while the ANN-MPC controller, using predictive modelling, can adapt to dynamic changes in system behaviour. The project aims to determine which control strategy offers superior performance, enhancing the overall efficiency, reliability, and adaptability of the SYRM drive system. Ultimately, the findings will provide a comprehensive evaluation of both methods, highlighting the most effective approach for future electric vehicle applications.

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Abstract:
The traditional medicine and natural health is a concern of great importance. Unfortunately, humans use informal identification techniques that are built to fail, which are at risk to incorrectly flag them as errors of concern. We present a new sample study of identification and classification of medicinal plant leaves using, Hybrid CNN and GMM. The proposed model has been a combination of CNN and GMM. The [CNN] and [GMM] occupy the place of feature extraction in our proposed model to extract unique information of medicinal plants to classify them. The dataset consists of 1,835 high-resolution images of more than 100 important medicinal plants of India. It includes information on the nomenclature of plants, their historical use, and the areas in which they are found. This proposed study shows that image processing, machine learning and computer vision provide a key approach to recognizing different medicinal plants and thus supports ethnobotanical and natural medicine research.

Published in: 2025 4th OPJU International Technology Conference (OTCON) on Smart Computing for Innovation and Advancement in Industry 5.0

Date of Conference: 09-11 April 2025

DOI: 10.1109/OTCON65728.2025.11071011

Date Added to IEEE *Xplore*: 14 July 2025

Publisher: IEEE

ISBN Information:
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Print on Demand(PoD) ISBN:979-8-3315-3537-7

Conference Location: Raigarh, India

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A Machine Learning and Community-Driven Approach for Feminist Cyber Resistance Framework to Mitigate Online Gender-Based Violence

Publisher: IEEE Cite This PDF

Bala Gangadhara Gutam ; Subhash Chandra Mouli D ; J. Naveen Kumar ; S. Dilli Babu ; J Suresh Babu ; M. Sunil Kumar All Authors

1 Cites in Paper
67 Full Text Views

Abstract

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IV. EXPERIMENTAL SETUP AND NUMERICAL RESULTS

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Abstract:
This paper introduces a new approach, the Feminist Cyber Resistance Framework (FCRF), in the fight against Online Gender-based Violence (OGBV) through the collaborative practices of machine learning (ML), sentiment analysis and community collaboration. FCRF strives to: find harmful information, mitigate its impact in real-time, and empower under-represented communities using more inclusive digital methods. Validated with a dataset containing 10,000 marked postings, the framework was able to achieve detection accuracy (91.5%), precision (89.8 %), and to reduce the amount of time to flag a posting by 40% compared to human flagging methods. In addition to this, 85% of community members rated the framework positively on transparency and inclusion! The findings reaffirm FCRF as an essential tool for combating OGBV, fostering digital equality, and enabling safer circles on the internet for women.

Published in: 2025 4th OPJU International Technology Conference (OTCON) on Smart Computing for Innovation and Advancement in Industry 5.0

Date of Conference: 09-11 April 2025

DOI: 10.1109/OTCON65728.2025.11070859

Date Added to IEEE *Xplore*: 14 July 2025

Publisher: IEEE

ISBN Information:
Electronic ISBN:979-8-3315-3536-0
Print on Demand(PoD) ISBN:979-8-3315-3537-7

Conference Location: Raigarh, India

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Publisher: IEEE Cite This PDF

V. Ratha ; Sankara Prasanna Kumar. M ; Siva Kumar. A. P ; Amshavalli M ; Ramarajan M ; Mamta Bansal All Authors

16
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Abstract:
Millions of smallholders throughout Africa rely on internationally traded agricultural products for their livelihoods, with almost 60% of rural populations in Senegal and Gambia depending on these commodities for income and nearly 70% of rural inhabitants engaged in related activities. Ongoing distortions in global trade have modified the competitive standings of market actors, necessitating an evaluation of the impact of trade liberalisation on welfare and entrepreneurial reactions. This paper analyses various scenarios of groundnut trade liberalisation against a recent historical baseline utilising an innovative partial-equilibrium, multi-market international model to assess trade and welfare consequences. The methodology incorporates sophisticated data preparation and utilises Empirical Mode Decomposition (EMD) to partition signals into IMFs. A hybrid convolutional recurrent deep learning architecture is suggested, integrating a 1D-CNN for efficient feature extraction with a GRU for temporal regression. The model is intended to identify intricate, nonlinear patterns pertinent to Adaptive Entrepreneurship within the context of Global Trade Policy Dynamics. The experimental validation and comparison analysis with current hybrid models confirm the robustness and efficacy of the proposed method. The MLP-EMD combination has the highest performance among all assessed models, attaining an accuracy of 98.16%. The findings underscore the significance of hybrid deep learning frameworks in facilitating adaptive entrepreneurial decision-making in dynamic global trade policy contexts.

Published in: 2026 1st International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETAACT)

Date of Conference: 10-11 April 2026

DOI: 10.1109/ETAACT69135.2026.11541435

Date Added to IEEE *Xplore*: 03 June 2026

Publisher: IEEE

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B. Venkatesu Goud, Fahimuddin Shaik, S. Tejaswi, K. Tejasree, R. Vishnu Priya & J. Siva Swathi

Part of the book series: Sustainable Artificial Intelligence-Powered Applications ((SAIPA))

Included in the following conference series: International Conference on Emerging Technologies and Computing Innovations

335 Accesses

Abstract

Food security is one of the most essential requirements of all human life. Understanding agricultural trends is important for effective resource management, with a growing global population and the shocks of climate change impacting humanity. In this study, we

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Crop Recommendation System Using Soil Content and Weather

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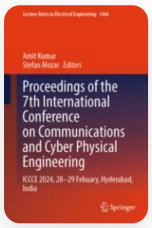
| pp 72–82 | Cite this conference paper



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P. Phanindra kumar Reddy, V. Madhu Sudhan Reddy, K. Nithin, P. Visweswara Rao & K. S. Maajid Hussain

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1466))

Included in the following conference series: International Conference on Communications and Cyber Physical Engineering 2018

579 Accesses 1 Citation

Abstract

This research analyzes the soil properties in detail by employing the techniques of data science, taking into account variables like temperature, moisture content, and chemical composition. Its main goals are to assess crop quality, identify weed infestations in a variety of plant species. The first step of the process involves exploratory data analysis, where missing values are identified using tools such as HeatMap. Using a range of machine learning models, such as Support Vector Classifier, Random Forest, KNN, and

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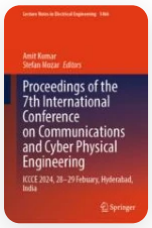
Advancements in Lung Cancer Prediction: An In-Depth Analysis and Optimization of Artificial Neural Network Algorithms

| Conference paper | First Online: 19 November 2025

| pp 98–108 | Cite this conference paper



Proceedings of the 7th International Conference on Communications and Cyber...

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B. Pandu Ranga Raju, J. Hemalatha, S. Sai Keerthana, K. Madhavi & B. Himaja

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1466))

Included in the following conference series:
International Conference on Communications and Cyber Physical Engineering 2018

584 Accesses

Abstract

Using cutting-edge neural network designs, the study "Advancements in Lung Cancer Prediction: An In-depth Analysis and Optimization of Neural Network Algorithms VGG16, InceptionV3, and EfficientNetB0" explores the field of lung cancer prediction. This study examines the performance of three well-known models: VGG16, InceptionV3, and EfficientNetB0, with an emphasis on improving prediction accuracy. By means of comprehensive research and optimization methodologies, the initiative endeavors to

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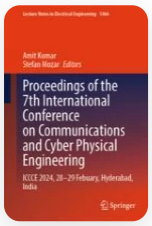

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A. Ramesh Babu, G. Shanmukha Sarma, G. Kiran Kumar, A. Madhu & S. Nayab Rasool

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Abstract

Market forecasting is a multifaceted endeavor influenced by a myriad of factors, blending rational analyses with the ebbs and flows of capitalist sentiment and market dynamics. In this paper, we delve into the realm of data analytics, specifically exploring the efficacy of Long Short-Term Memory (LSTM) deep learning models in accurately predicting stock market prices. Recognizing historical data as a pivotal element shaping market events, we employ machine learning techniques, particularly LSTM, to discern patterns and glean insightful predictions. Our proposed model endeavors to refine investment decision-

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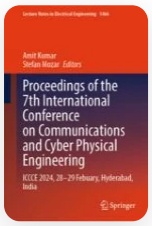

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N. Swathi, A. Harika, G. Gouthami, K. Amrutha Sree & D. Swetha

Part of the book series: Lecture Notes in Electrical Engineering ((LNEE,volume 1466))

Included in the following conference series:
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Abstract

The functionality of smart healthcare systems has been greatly improved by the quickly developing Internet of Medical Things (IoMT), with its cutting-edge real-time services. However, there are significant privacy and security problems with IoMT, which are exacerbated by the wide range of these devices, making it more challenging to provide a unified security solution. Moreover, the prevalent cloud-centric IoMT healthcare systems, which rely on cloud computing for Electronic Health Records (EHR) and medical services, make a decentralized IoMT healthcare model impractical. This study proposes

A Hybrid Graph Neural Network-Based Reinforcement Learning Approach for Adaptive Cybersecurity Risk Management in FinTech

Publisher: IEEE Cite This PDF

M. Radha ; Yeshwanth Vasa ; Ashish Reddy Kumbham ; Prasanthi Vallurupalli ; S. Ashok Kumar ; Dhivya A All Authors

3 Cites in Papers
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Abstract
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Abstract:
The increasing difficulty of cyber risks in FinTech demands intelligent, adaptive risk management solutions that can learn and develop with dynamic threat environments. Conventional machine learning models frequently fail to adequately capture the structural dependencies and sequential decision-making required to overcome complex attacks. This study introduces an innovative hybrid architecture that integrates Graph Neural Networks (GNNs) with Reinforcement Learning (RL) for dynamic cybersecurity risk management. The GNN component efficiently represents inter-entity interactions in cybersecurity data, whereas the RL module adaptively enhances threat response strategies according to changing system states. A benchmark dataset obtained from Kaggle was utilised to evaluate the system's performance, demonstrating major improvement compared to conventional methodologies. The suggested GNN-RL model attained an accuracy of 96.8 %, precision of 95.2 %, recall of 94.7 %, and a ROC-AUC score of 98.3%, higher than baseline methods such as SVM, Random Forest, and independent GCN. This illustrates the system's capacity to professionally adjust to complicated attack vectors and reduce threats in real time. This research presents a scalable and context-sensitive cybersecurity solution by mixing graph reasoning with reward-based decision-making. The results indicate significant implications for the use of AI-driven cyber defence frameworks in high-stakes financial settings, representing progress in the advancement of autonomous security systems.

Published in: 2025 International Conference on Computing Technologies & Data Communication (ICCTDC)

Date of Conference: 04-05 July 2025
DOI: 10.1109/ICCTDC64446.2025.11158732
Date Added to IEEE *Xplore*: 22 September 2025
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IoT-Enabled Graph Neural Networks and Deep Learning for Accurate Road Accident Detection and Analysis

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K. Uday Kumar Reddy ; Tadi Chandrasekhar ; Venkata Kiran Kumar Ravi ; V. Navin Ganesh ; Durgadevi P ; Anil Kumar Lamba All Authors

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Abstract:
Vehicle accidents represent a continual worldwide problem, resulting in considerable fatalities and financial damage. Conventional traffic monitoring systems frequently lack the capability for immediate and precise accident identification, resulting in longer response times. This research introduces an innovative IoT-enabled system for real-time accident detection, integrating Graph Neural Networks (GNNs) with deep learning methodologies, including Convolutional Neural Networks (CNNs) and Long Short-Term Memory networks (LSTMs). The system analyses both spatial and temporal data, guaranteeing precise predictions and minimal lag in reaction times. suggested solution outperforms existing systems, achieving an accuracy of 97.6%, precision of 96.2%, recall of 98.1%, and an F1-score of 97.1%. The hybrid model's efficiency, especially in varying traffic conditions, illustrates its capacity to manage extensive data and conduct real-time analysis, making it an outstanding option for modern road accident detection. This method not only improves safety but also offers a scalable solution for worldwide application in urban traffic control systems.

Published in: 2025 3rd World Conference on Communication & Computing (WCONF)

Date of Conference: 25-27 July 2025

DOI: 10.1109/WCONF64849.2025.11233480

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Publisher: IEEE

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Publisher: IEEE Cite This PDF

Nalla Navatha ; Kachi Anvesh ; Akula Revanth ; Swati Singh ; Cheruku Pramod ; A. Ramesh Babu All Authors

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Abstract:
This study presents a machine learning-based personalized diabetes assessment framework using multimodal clinical data including glucose level, BMI, insulin, blood pressure, age, and skin thickness. The dataset undergoes structured preprocessing steps such as mean imputation, outlier removal using the Interquartile Range (IQR) method, and Min–Max scaling. Logistic Regression, Linear Regression, and K-Nearest Neighbors (KNN) were implemented and evaluated. The KNN model achieved an accuracy of 86.45%, F1-score of 84.27%, and ROC-AUC of 86.13%, demonstrating balanced predictive capability. Personalized recommendations are generated based on key feature influences. This work closes gaps in existing research by integrating multimodal indicators, comparing multiple machine learning models, and delivering personalized insights for early diabetes detection.

Published in: 2025 8th World Engineering Conference on Contemporary Technologies (WECON)

Date of Conference: 10-11 October 2025

DOI: 10.1109/WECON68556.2025.11414577

Date Added to IEEE *Xplore*: 05 March 2026

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Next-Generation Solar Panel Monitoring: A Deep Neural Network Framework for Fault Detection and Classification

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Abstract:
Solar power plays a vital role in addressing the global demand for renewable energy, yet its efficiency is often reduced by surface faults such as dust, bird droppings, snow, and electrical or physical damage. This study presents a deep neural network-based framework for automated solar panel fault detection and classification. Six surface conditionsClean, Dusty, Bird-drop, Electrical-damage, Physicaldamage, and Snow-Covered-are analyzed using advanced deep learning models including CNN, DenseNet, MobileNetV3, VGG19, InceptionV3, and RegNet. The dataset undergoes preprocessing and augmentation to improve robustness, followed by training, validation, and testing using $70-15-15\%$ splits. Performance metrics such as accuracy, precision, recall, and F1-score are used for evaluation. Results show that MobileNetV3 achieved the highest accuracy (82%) and $\mathbf{F1}$-score (0.90), demonstrating superior real-time fault classification efficiency. DenseNet also performed competitively due to effective feature reuse. The findings highlight the capability of deep learning to automate solar panel maintenance, reduce downtime, and improve operational efficiency-contributing to the sustainable growth of solar energy systems.

Published in: 2025 Third International Conference on Emerging Applications of Material Science and Technology (ICEAMST)

Date of Conference: 03-05 November 2025
DOI: 10.1109/ICEAMST67459.2025.11335747
Date Added to IEEE *Xplore*: 21 January 2026
Publisher: IEEE
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Data Detox: A Smart and Visual System for Anomaly Detection and Interactive Cleaning

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Abstract:
In data-driven innovation, data quality is very important in order to achieve proper analytics and dependable machine learning results. Nevertheless, in the real world, data are prone to missing values, outliers, redundancy and inconsistency which deteriorate model performance. To overcome these difficulties, this paper suggests Data Detox, a smart and graphic system of automated data cleaning and anomaly detection. The system combines hybrid outlier detection techniques with Isolation Forest and Interquartile Range (IQR) with automated Exploratory Data Analysis (EDA) techniques to profile and visualize data. Based on Python and Streamlit, Data Detox offers an interactive platform allowing users to convert, clean, and visualize datasets with low interaction. Experimental findings show that the framework can cut down on the time taken to prepare data by about 45 percent with data consistency and reliability also enhanced. The system is suggested to augment machine learning use preprocessing pipeline and provides an efficient, scalable, and easy-to-use way to address automated data quality management.

Published in: 2025 Third International Conference on Emerging Applications of Material Science and Technology (ICEAMST)

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Flexible Optimal Graph-Based Multimodal Feature Selection for Multi-Class Neurodegenerative Disease Diagnosis

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IV. PROPOSED WORK
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Abstract:
"Neurodegenerative disease", like Mild Cognitive Impairment (MCI) within the Alzheimer's disease spectrum and related disorders, brings significant challenge to early and correct diagnosis with its heterogeneous course and overlapping clinical symptoms. In this paper, we introduce the "Flexible Optimal Graph-Based Multimodal Feature Selection (FOGMFS)" framework as a new approach to facilitate multi-class neurodegenerative disease prognosis through efficient fusion of multimodal neuroimaging features. The framework employs a modular pipeline that combines data preprocessing, feature extraction, graph learning, feature selection, and classification within a common optimization framework. Building on advanced feature extractions like ResNet and EfficientNet, FOGMFS constructs advanced imaging features while graph learning creates adaptive relational structures over features to retain essential interdependencies of data. In addition, a dynamic feature selection method identifies highly discriminative sets while reducing redundancy, boosting model interpretability. The extracted features are then optimized in a graph-guided classifier for stable accurate multi-class disease prognosis. Experiment results demonstrate that "FOGMFS" achieves competitive performance with good generalizability while its modular design ensures flexibility across various datasets as well as clinical requirements. Finally, we create a Streamlit-based interface that supports an interactive, user-friendly prediction platform for physicians. In summary, "FOGMFS" is a reliable, readable, scalable approach towards advancement of neurodegenerative disorder prognosis methods.

Published in: 2025 1st International Conference on Advancement in Futuristic Technologies (ICAFT)

Date of Conference: 19-21 December 2025
DOI: 10.1109/ICAFT66710.2025.11452897
Date Added to IEEE *Xplore*: 31 March 2026
Publisher: IEEE
ISBN Information:
Conference Location: Belagavi, India

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Federated Learning–Driven Medical Chatbot for Privacy-Preserving Symptom Assessment

Publisher: IEEE Cite This PDF

U. Naresh Kumar ; A. Ramesh Babu ; Yerva Yasmithareddy ; Kuluru Reddi Lakshmi ; Mosa Venkata Siva ; Kurapati Sai Harshith All Authors

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Abstract:
To meet these challenges, this research introduces an artificial intelligence (AI)-based medical chatbot model which may predict infectious diseases and provide interactive medical aid. The chatbot is able to provide correct, context-based answers. because the system has an LSTM algorithm that was trained with a chosen set of medical question-answers. With the Google Translation API integrated, the chatbot will be able to respond in English as well as Telugu, and it can be accessed through voice or text interfaces. The 99% training accuracy of the model indicates that it can easily handle a vast array of user queries. This chatbot is an excellent device for making easy access to medical assistance available because it possesses modules to register, login, fetch conversation history, and converse in real-time.Smart, global health chatbot that enhance the provision of healthcare, especially in the environment with restricted resources, can be developed by combining deep learning with natural language processing, as exemplified in this work.

Published in: 2025 1st International Conference on Advancement in Futuristic Technologies (ICAFT)

Date of Conference: 19-21 December 2025

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Date Added to IEEE *Xplore*: 31 March 2026

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AI-Powered Reasoning Framework for Multilingual Fake News Detection

Publisher: IEEE Cite This PDF

S. Prasanna ; Fahimuddin Shaik ; A. Charan Kumar Reddy ; P. Kamaniya Sai ; K. Chaitanya ; M. Dinesh All Authors

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V. IMPLEMENTATION

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Abstract:
Rapid detection of fake news, a major global issue, is the root of the problem of the quick spreading of false information through digital channels, which endangers the trust of the public. This paper presents an AI reasoning framework as a method to expose and offer an easy and trustable way for different user groups. The cross-lingual challenge of finding fake news is the problem with which the framework is dealing. After word embeddings have captured the conceptual core of the news articles, the system proceeds to represent the semantic relationships with the texts. Next the use of a gradient-boosting classifier gives more flexibility in decision-making on the same accuracy level, thus benefiting from the best of both worlds. The framework reaches breakthrough accuracy of 98.9%, thus making it comparable to traditional approaches. Hence, the system is not only successful in the prediction phase, but it also utilizes transparent AI methods, which allow the end users to follow the logic of each prediction, thereby giving an indication of fairness and trust. Moreover, a real-time interface has been developed so that the public can quickly verify the trustworthiness of the news flow.

Published in: 2025 1st International Conference on Advancement in Futuristic Technologies (ICAFT)

Date of Conference: 19-21 December 2025

DOI: 10.1109/ICAFT66710.2025.11453020

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ISBN Information:

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Kidney Tumor Detection in CT Scans: Combining 3D CNN and Transformer Networks

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B. Venkatesu Goud ; P. Phanindra Kumar Reddy ; P. Sai Varshitha ; T. Sruthi ; N. Lakshmi Narayana Reddy ; K. Harsha Vardhan Reddy All Authors

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Abstract:
A novel hybrid deep learning algorithm is proposed to detect kidney tumors on CT scans, which is a combination of 3D convolutional neural networks (CNNs) and transformer networks capability. In the framework, volumetric processing consists of sequence modeling and thus, the framework is useful in the representation of local texture as well as the global contextual relationship among the multi-slice CT volumes. The model employs the ConvNeXt-inspired 3D backbone to preserve the spatial relations among slices, and then, the transformer encoder is introduced that predicts the long-range dependencies among slices with attention mechanisms, and enhances the accuracy of the slices detection. It has such innovations as a depth-sensitive patch embedding layer that maintains the inter-slice interconnections of 3D convolutions and 2D attention maps, adaptive positional encodings to handle variable slice spacing in CT scans, and a multi-scale feature fusion module, which combines complementary information between the CNN and transformer pathways. The advances improve high sensitivity and specificity of the model on detection of malignant lesions, cysts and kidney stones. Performance of the model training on large-scale data of kidney CT volumes with normal and pathological cases is very high, and inferencing time is just okay in clinical processes. The hybrid methodology is favorable (in comparison with traditional 3D CNNs and pure transformer models) in terms of its capacity to handle slice-to-slice variations without the need to lose fine spatial details. The study shows that hybrid architectures will be able to expedite volumetric medical imaging to result into a major solution that would advance diagnostic AI within the radiology discipline.

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A Comprehensive Survey on Paraphrase Identification Using Deep Learning Techniques

Publisher: IEEE Cite This PDF

D Sai Shireesha ; Pandurangaraju B ; G Naga Harshitha ; G Vedavathi ; B Naga Tharun Kumar ; N Venkata Subbaiah All Authors

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Abstract:
Among the tasks that are urgent in Natural Language Processing is the identification of paraphrase, which is a task that entails deciding whether two sentences have the same meaning despite the difference in wording. This project discusses the models of the deep learning in the classification of two sentences as either paraphrases or non-paraphrases. To determine the base performance, initially, the classic models, such as Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), and BERT will be used. Next to enhance the additional semantic insight and the precision, more sophisticated models employing the use of transformers including RoBERTa and contrastive learning are presented. The models are ready and tested on benchmark sets with an objective of sentence-pair classification. The strengths and weaknesses of each of the methods of resolvising the problem of syntax difference, ambiguity, and context-retainment are identified in this paper. These results can be used in the improvement of the following tasks: duplicate detection, question answering, and content summarization as they offer information on the successful paraphrase recognition in the context of the modern deep learning trends.

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1 Cites in Paper

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IV. METHODOLOGY

V. RESULTS

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Abstract:
6G wireless communication would be the type of connectivity that would enable connecting billions of ultra-intelligent devices to each other, enabling immersive applications (such as holographic telepresence) and autonomous mobility with less than a millisecond latency. However, in the given situation, the conventional cloud-based AI pipelines are not scalable since steady stream of raw data can overwhelm backhaul connections and jeopardize the privacy of users. To address them, the present paper develops a Federated Learning (FL) system that can be deployed on edge devices to train models locally and just send encrypted weight updates to a central server. A Flask web application is offered as an example of the proposed system, and the users may register and provide beamforming datasets, select one of six candidate algorithms (Random Forest, FNN, CNN, MLP, XGBoost, and Decision Tree), and receive real-time predictions of whether 6G beamforming may be successful. The backend emulates a simulated FL round which averages locally derived model parameters with a tree based ensemble, 100 percent accurate without compromising data sovereignty. The system is further credited to be characterized by high reduction of communication costs, low latency and security towards data reconstruction attacks compared to centralized ones. Nevertheless, a set of challenges (non-IID data distributions, straggler devices, model poisoning, and the need of an effective incentive mechanism) remains. The paper concludes with the suggestion that the considerations of the principles of differential privacy, secure aggregation, and blockchain-based audit trails will become much more important in the equitability and scalability of FL using 6G ecosystems.

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Intelligent Assessment of Rehabilitation Outcomes in Substance Abuse Patients using Advanced Machine Learning Algorithms

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Sanapalle Prasanna ; Pandurangaraju B. ; Angadi Sirisha ; Shaik Sana ; Pallapa Venkatasunil ; Utukuru Vijay Kumar All Authors

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Abstract:
"Drug addiction" remains a serious "worldwide health issue", influencing the "physical, emotional, and social lives of individuals". Early evaluation and detection of "risk individuals" are mandatory for efficient "recovery and timely intervention". Current evaluation systems mostly depend on "manual questionnaires or simple statistical scoring systems", which might not be "predictive" and cannot combine "numerous behavior and demographic indicators to provide comprehensive or timely information". This project puts forward a smart, databased "Drug Dependency and Rehab Assessment Tool" that utilizes "machine learning and deep learning methodologies" for precise assessment. The model relies on an "extensive dataset with demographic information (like age, gender, and work status), drug use patterns, psychiatric indicators, and social support data". "Label encoding, the introduction of noise, simulation of outliers, and shuffling of the dataset are used in preprocessing" to make the model more robust. Three models—"Random Forest, XGBoost, and a Neural Network"—are trained to estimate the probability of confirmed "drug dependency, and performance metrics like accuracy, precision, recall, F1score, RMSE, and ROC-AUC" are utilized for evaluation. Visualization modules like "confusion matrices, ROC curves, feature importance plots, and distribution charts" are rendered using Streamlit, along with interactive "Lottie animations for user interaction". By combining several "machine learning models" with interactive visualization, the suggested system overcomes the shortcomings of current singlemethod or manual methods and offers an "integrative, real-time, and intuitive assessment framework" for drug dependency and rehabilitation requirements.

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Deep Learning Based Early Detection of Pneumonia Using Medical Imaging

Publisher: IEEE Cite This PDF

D Suresh Reddy ; Mundla Nandini ; J. Naveen Kumar ; Bala Gangadhara Gutam ; Tella Prameela ; S Dillibabu All Authors

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Abstract:
Pneumonia is a serious lung disease, this enables disease most of the people are affected now a days mainly elders & children. Early Detection is crucial for effective treatment, However, standard diagnostic methods like specialists examination of X-rays of chest can be time-consuming along with vary depending on the experience of the doctor. This study explores using technology for deep learning, particularly Convolutional Neural Networks (CNNs) like ResNet-50 and InceptionV3, can assist in accurately and rapidly pneumonia diagnosis based on X-rays of the chest pictures. Given its strength in image processing, CNNs are ideal for analyzing medical images and spotting trends that might point to pneumonia. This study adopts the ResNet-50 model due to its capacity to manage deep layers of information without losing important details, while InceptionV3 can capture subtle features in the images. These models are instructed on a sizable gathering of labeled X-rays of the chest to create a system that can correctly and automatically identify pneumonia symptoms, serving as a medical assistant. The model can identify pneumonia with high accuracy, lowering the number of missed cases and false alarms, according to the results. With this deep learning approach, the researchers aim to support radiologists by speeding up the diagnosis process and providing consistent results. This technique may prove particularly beneficial in places with a shortage of medical resources, where prompt and accurate diagnostic instruments can have an important impact on patient treatment. Techniques: Convolutional neural networks (CNNs), KNNs (K-Nearest Neighbors), SVMs (Support Vector Machines), pre-trained models (ResNet-50, InceptionV3), Image pre-processing and enhancement, data augmentation, and image resizing.

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Interpretable AI Enabled Solutions for Crop Selections, Yield Estimation and Rainfall Analysis in Precision Agriculture

Publisher: IEEE Cite This PDF

P. Phanindra Kumar Reddy ; K Sasidhar Reddy ; C Chaithra Vardhan Reddy ; P Vandana ; G Madhusudhan ; N Chandrakala All Authors

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Abstract:
The rapid growth of the world's population and the growing need for food security have made modern farming very difficult. Traditional farming methods often don't work well with changes in the environment, low yields and changes in rainfall. In order to solve these limitations this study focuses on the creation of usable artificial intelligence driven solutions for crop selection, yield prediction and rainfall analysis thus enabling precision agriculture. The goal is to give farmers accurate and simple data-driven insights so that they can make important decisions about crop management that are both economical and clear. The suggested method combines a number of machine learning and deep learning models such as Decision Tree, Random Forest, AdaBoost, XGBoost, Support Vector Machine, Gradient Boosting Machine, k-Nearest Neighbors, Artificial Neural Network, Recurrent Neural Network, Long Short-Term Memory and Convolutional Neural Network. To make predictions easier and build trust among those involved clear techniques are used. The framework's test outcomes show that it has a very high prediction accuracy of 98.9% which makes agricultural forecasting much more accurate. The study finds that the combination of advanced algorithms and understanding not only improves predictive performance but also makes it possible for farming practices that are both smart and economical and can adjust to future agricultural needs.

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Interpretable Machine Learning Approaches for Resilient DDoS Detection in Software-Defined Networks

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Phanindra Kumar Reddy Poli ; Sasidhar Reddy Kudumula ; G Homeshwar ; A Madhuri Yasaswini ; P Nithya Nandeep Kumar ; R Vinesh Reddy All Authors

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Abstract:
SDNs are dynamic, scalable and may be susceptible to Distributed Denial of Service (DDoS) because of its centralized control. In this paper, hybrid machine learning methodology has been introduced to detect DDoS in SDN. The suggested approach helps to use unsupervised algorithms (K-Means clustering, Principal Component Analysis (PCA), and K-Best feature selection) with supervised classifiers (Decision Trees, Random Forests, and ensemble classifiers including Stacking and Voting). The unsupervised methods are used to decrease dimensionality and create features that are significant, therefore, maximizing the accuracy of classification. The findings show that all models had an accuracy of 96 per cent, which shows that the hybrid model is effective in separating between normal and malicious traffic. In addition, ensemble techniques especially, Stacking and Voting classifiers were also found to be robust and gave the most reliable result. This framework will be used to improve the security of SDN by offering an effective DDoS detection mechanism. The next generation of SDN can see the addition of deep learning models and explainable AI in order to enhance the functionality and interpretability of SDN.

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Phanindra Kumar Reddy Poli ; Fahimuddin Shaik ; Guru Raghavendra Kamboji ; Gayathri Kondaveeti ; Guru Mahendra Kalluri ; Mahesh Bollu All Authors

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V. Comparative Analysis of Classical and Hybrid Model

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Abstract:
Real-time threat detection and classification is the core requirement for the cybersecurity discipline since the threat of advanced cyberattacks has increased multiple with the rapid expansion of digital technologies. Classic intrusion prevention and detection commonly utilize signature-based or single-model solutions that are unable to combat growing network traffic, new attack patterns and zero-day attack. This paper suggests ThreatClassifier, an online cyberattack classifier using hybrid machine learning models in a bid to reverse these downsides. The classifier combines the strengths of supervised learning models like Random Forest, XG-Boost, and Logistic Regression for maximum flexibility as well as accuracy in identifying multiple attack patterns. For efficient model optimization, feature engineering and dimension reduction are utilized, and ensemble learning methods provide immunity against spurious positives. With preventive security actionable insights, the intended system is aimed at detecting attacks like hacking, phishing, Distributed Denial of Service (DDoS), and malware infection in real-time. Also included in the system is a real-time visualization dashboard and user-friendly interface to allow security analysts to monitor threats, discover anomalies, and make timely decisions. Experimental evaluations on benchmark cybersecurity datasets demonstrate that the hybrid model achieves greater accuracy, faster classification, and improved cost- effectiveness compared to conventional models. By combining predictive potential and usability, ThreatClassifier increases proactive defenseso that organizations can remain strong against emerging cyber threats.

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Balancing Transparency and Privacy with Explainable AI and Federated Learning in Fraud Detection

Publisher: IEEE Cite This PDF

P. Phanindra Kumar Reddy ; Fahimuddin Shaik ; T. Pavani ; B. Vijaya Durga ; M. Sai ; B. Sai Gowtham Reddy All Authors

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Abstract:
The recenx't approaches supplemented with explainable AI (XAI) and Federated Learning (FL) include transparency and privacy particularly to the high-stakes financial fraud detection. In our project, we are working with the Paysim1 data of Kaggle in order to prepare a model that will not only be in a position to predict the accuracy of the bank transactions successfully, but also be generalized to identify the presence of a fraudulent transaction with the high degree of accuracy. Though the ensuing outcomes of the conventional fraud detecting models such as Deep Neural Networks (DNN), Recurrent Neural Networks (RNN), Stochastic Gradient Descent (SGD) are handy, they may be considered as problematic in terms of interpretability and privacy since they assume a centralized data processing. To address these weaknesses, the alternative machine learning models will be utilized in the proposed system, which are more understandable, and can address more intricate patterns of fraud the Decision Trees, Random Forests and Gradient Boosting Machines (GBMs). Second, Federated Learning (FL) is also applied to ensure that the models would be trained locally without the need to transmit sensitive data to comply with privacy. Not only will this ensure privacy of the information of the users, but also achieve collaborative learning that can be engaged further to perfect the model of detecting the fraud. The project will additionally be useful in creating a more ethical and effective version of financial fraud identification, the precision of the model with regards to privacy and transparency which incorporates XAI and F.

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A Fair and Efficient Pricing Framework for EV Battery Swapping Based on Real-Time Life Cycle Prediction

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B. Venkatesu Goud ; C. Venkata Bharani ; S. Soban ; E. Venkata Krishna ; A. Naga Pranitheswar Reddy ; C. Narendra Reddy All Authors

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Abstract:
The study presents an integrated machine-learning framework for accurately predicting the Remaining Useful Life (RUL) of electric vehicle (EV) batteries and applying these predictions to dynamic fair pricing in battery-swapping stations. The framework employs XGBoost Regression alongside Random Forest, K-Nearest Neighbors (KNN), and ensemble techniques such as Stacking and Voting Regressors to enhance predictive accuracy and robustness. Real-world battery operational parameters, including discharge time, cycle index, voltage thresholds, and charging duration, are used for model training and evaluation. Ensemble models, particularly stacking, demonstrate superior performance with high $\mathbf{R}^2$ values and low prediction error, confirming their effectiveness in capturing nonlinear degradation behavior. The predicted RUL is further integrated into a pricing mechanism that supports transparency, cost efficiency, and improved battery lifecycle management for EV users. The proposed system contributes to sustainable EV infrastructure by enabling real-time predictive maintenance and data-driven operational decisions.

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Abstract:
The paper presents an automated text extraction and evaluation system, developed on Flask, and combining AWS Textract for Optical Character Recognition and ROUGE-L for assessing textual similarity. Traditionally, written content extraction from images has been a time-consuming process, requiring significant human effort and time. To counter this issue, the system runs in two primary modes: Text Extraction and Text Evaluation. In the first mode, user images containing written material are uploaded, and later, processed through AWS Textract-an effective OCR engine capable of pulling significant textual data. In the Text Evaluation mode, extracted text is evaluated against a reference dataset through ROUGE- L, a popular Natural Language Processing metric, which calculates overlap by determining the longest common subsequence. The system, on the basis of the obtained similarity score, assigns grades as per predefined thresholds. The entire workflow is controlled through a Flask-based REST API, ensuring effortless communication and easy integration with external systems. The approach significantly enhances the speed and accuracy of text evaluation in a range of applications, namely education, document authentication, and auto-grading. The system, by combining AWS services, NLP-based scoring systems, and Flask API design, delivers a scalable, accurate, and real-time text evaluation system.

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Detection of Algorithmic Bias in AI-Based Recruitment Systems Using Explainable AI

Publisher: IEEE Cite This PDF

P. Hari Krishna ; K. Uday Kumar Reddy ; G. Leela Aravinda ; V. Anjali ; C. Bhavana Reddy ; SK. Abdur Rehman All Authors

1 Cites in Paper

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Abstract:
This project is about an intelligent recruitment forecasting system that uses advanced machine learning models to evaluate and score candidates for hiring. The system combines Logistic Regression, Multi-Layer Perceptron (MLP), and XGBoost to make dependable predictions from candidate facts like age, experience, and education level, the skills, certifications, and requirements of the job. In order to raise the quality of data, the system gets job and candidate details ready, calculates skill intersections, and changes the categorical features into suitable numerical formats. The problem with the class that was solved was by using Random Over Sampling, so that the models remain stable and not biased during the training. The performance of the models is very well measured through the use of the different metrics like accuracy, precision, recall, and F1-score together with the visualization tools such as confusion matrices and ROC curves, thereby enabling the recruiters to benchmark the algorithms and pick the one that is most effective for candidate evaluation. In order to open up more, the system uses Explainable AI methods like SHAP (Shapley Additive Explanations) and LIME (Local Interpretable Model-Agnostic Explanations). SHAP offers both global and local feature importance, while LIME clarifies how individual candidate features influence a prediction. These explanations make it possible for the recruiters to know the “hired” or “rejected” decisions' logic and thus help in establishing fairness, trust, and accountability. To sum up, this project is a proof of concept that the use of machine learning and explainable AI in recruitment can lead to a more secure decision-making process, fewer biases from algorithms, and a more consistent and morally right way of choosing candidates.

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AI-Driven Recruitment: Resume Screening and Skill Matching with NLP

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Machine Learning Framework for Early Detection and Prediction of Sleep Disorders Using Multimodal Health Data

Publisher: IEEE Cite This PDF

A. Ramesh Babu ; Pandurangaraju. B ; D. Deepika ; K. Hemanth Kumar ; S.M. Mahammad Mubarak ; A.C.Guru Balaji All Authors

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Abstract:
A growing number of sleep disorders like apnea and insomnia has increased and they have been connected to major health problems like overweight, mental health disorders and heart diseases. Although accurate, traditional methods of detection are often time consuming, costly and require specific medical knowledge which prevents their broad adoption. This work offers a machine learning-based method for predicting sleep disorders and delivering immediate feedback through an interactive system driven by the need for a cost-effective and effective solution. To get sleep related datasets ready for model training the suggested framework uses a variety of preprocessing methods such as data cleaning, feature engineering, normalization and correlation analysis. Several classification models were used and compared the highest accuracy of 95% was obtained by Random Forest, followed by Logistic Regression (91%), Quadratic Discriminant Analysis (93%) and Gradient Boosting (94.6%). Users can now enter their own sleep data and receive predictions and preventive recommendations because of the integration of the most accurate model into an interactive web application. With a simple interface for users and powerful machine learning techniques this study provides a flexible and effective solution for early identification and treatment of sleep disorders which will enhance the quality of life.

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DOI: 10.1109/IDCIoT67589.2026.11455868

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MediAI: An Intelligent Healthcare System for Disease Prediction and Patient Support

Publisher: IEEE Cite This PDF

K. Uday Kumar Reddy ; Fahimuddin Shaik ; Y.Y. Mani Sankar Reddy ; C. Dharma Teja Varma ; S. Hammad Ali Khan All Authors

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Abstract:
The detailed nature of disease diagnosis and a sharp increase of medical needs require automated systems that can help both patients and doctors. Medical AI aims to address this challenge by providing predictions for serious issues including kidney disorders, liver cancer, respiratory illness, malaria, heart issues and heart problems. The system makes use of deep learning and machine learning techniques to provide accurate predictions. Convolutional neural networks can be used for disease detection with excellent accuracy in detecting malaria and respiratory diseases. Random Forest Classifiers are used to predict heart, kidney and liver related conditions with reliability and precision for visual clinical data. Advanced processing methods like digital sampling are used for working with imbalanced datasets and exploratory data analysis ensures superior input data. Healthcare doctors are able to make predictions through immediate tracking and interaction using Flask based user interface. The success of disease detection are shown by results that show an overall prediction accuracy of 98.9%. The system may improve patient outcomes, less errors in treatment and improve making choices in medical settings by combining several models of prediction and real time support features. Through the use of advanced algorithms, data preparation and easy user interfaces the method shows how intelligent systems could transform patient care and identify illnesses.

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A Semi-Supervised Hybrid Deep Learning Model with Mobile Net- GCN for Interpretable Diabetic Retinopathy Detection

Publisher: IEEE Cite This PDF

P. Renuka ; S. Fahimuddin ; Shaik Mahammed Saif ; Simhadri Bathula ; Shivani Mallela ; Chandrika Padamatinti All Authors

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Abstract:
DR causes significant impairment of the vision of patients with diabetes, largely due to late diagnosis and therapy. In a bid to solve this serious problem, the latest research has proposed more sophisticated diagnostic systems developed by using the strong potential of DenseNet as a feature extractor. The dataset to be utilized in the research was obtained on Kaggle and it comprised 506 training images and 217 validation images which were divided into five different stages of DR; namely, Mild, Moderate, No_DR, Proliferative_DR and Severe. The stages are critical to the evolution of DR and are plotted on the following scales; Mild (0), Moderate (1), No DR (2), Proliferative DR (3), and Severe (4). Medical imaging is complicated, so DenseNet is especially suitable to this task. Its distinctive structure, which maximizes gradient flow and facilitates feature reuse, is most suited to large-scale medical image datasets, including retinal scans. The model performance will be evaluated on the basis of the weight learnt during the training process by testing them on a special validation set to ensure an exemplary level of accuracy and precision, in the prediction. Not only will this improve the rate of the diagnostic accuracy, but it will also assist in the earlier diagnosis of diabetic retinopathy which will enable the health care practitioners to provide effective treatment in a timely manner. After all, this system also promises to help improve patient outcomes substantially, with the faster and more accurate diagnosis of DR possible.

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Sky Shield: ML-Driven DDoS for Detection &Defense in Multi-UAV Communication Networks

Publisher: IEEE Cite This PDF

Sai Shireesha Desetty ; Fahimuddin Shaik ; Akhila Juturu ; Jaya Chaitanya Reddy Kayala ; Chandra Sekhar Reddy Kollamoram ; Alekhya Naguru All Authors

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Abstract:
The swift integration of drones into delivery services, monitoring, relief efforts and military operations has created new vulnerability to network based cyberattacks especially distributed defection of service threats which may disrupt communication and undermine mission safety. The main driving force for this study is ensuring constant connectivity and robust operations in such important applications. We introduce Sky Shield a modern machine learning framework created to identify and react to unwanted traffic in numerous drone networks in order to solve this issue. The method achieves highly precise classification of adverse compared to normal network traffic by combining convolutional neural networks for secret feature extraction long short-term memory networks for temporal structure capture and a hybrid ensemble model that uses random forest and gradient boosting. The suggested system showed an excellent capacity to detect both small and severe attack attempts achieving an overall detection precision of 98.9 percent. In addition to detection Sky Shield includes a live mission control interface that enables operators to track the health of drones, examine real-time traffic, evaluate risk levels and get helpful guidance during ongoing events.

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Attention-Based Feature Fusion for Realistic and Personalized Facial Expression Generation

Publisher: IEEE Cite This PDF

P. Mabjan ; Pandurangaraju. B ; Fahimuddin Shaik ; K. Gouthami ; G. Harinath Yadav ; P. Mahammad Haneef All Authors

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Abstract:
Facial expression generation is a key component of human-computer interaction and finds a wide range of applications in virtual avatars, social robotics, and emotion aware systems. We propose an attention, based multi-level feature fusion framework for realistic and personalized facial expression synthesis. The introduced method utilizes a CNNbased feature extractor to capture hierarchical facial representations that include both texture and structural attributes. A separate spatial and channel attention mechanism not only focuses on the most informative regions of the face for the given emotion, e.g., the eyes, mouth, and eyebrows, but also enables the interaction of local and global features to be fused effectively. The attention weighted features are subsequently fed to a GAN-based decoder for generating high quality facial expressions with identity preservation. The model is trained with a mixture of adversarial, reconstruction, and identity preserving losses to guarantee the generated images are realistic, the expressions accurate, and the personal characteristics consistent. The performance of the proposed approach has been verified through extensive experiments on facial expression datasets. The method exceeds CNN-only and GAN-only models both quantitatively and qualitatively in terms of visual realism, expression fidelity, and identity preservation. Those findings confirm the potential of the proposed framework for the task of personalized facial expression synthesis based on attention driven multi-level feature fusion. The technique is therefore, a viable option for the development of interactive applications in virtual reality, social agents, and emotion-centric AI systems.

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XAI for Agriculture: Low-Complexity AI Solutions for Real-Time Plant Health Monitoring

Publisher: IEEE Cite This PDF

S. Ashok Kumar ; A. Ramesh Babu ; A. Hima Sree ; C. Amrutha ; E. Bhavani ; S. Althaf All Authors

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Abstract:
Plant diseases are a major challenge in producing agriculture products, especially in areas where the diagnosis is often made through simple visual inspection and traditionally poor access to experts. While deep learning methods have proven to be very accurate in a controlled setting, real-world implementation is limited because of high computational demands and difficulty in clear decisions and usability for farmers. To circumvent these problems, in this paper, we propose a lightweight and interpretable plant disease detection model named XAI-Plant, that is designed to work in real-time on resource constrained device. The proposed system employs a small convolutional neural network optimized for execution on a CPU combined with a version of Grad-CAM explainability module that highlights the disease affected areas in the leaf images. In addition, a multifaceted (multilingual) output interface is incorporated in order to enhance accessibility of users with different linguistic backgrounds. The model is then trained with a combination of benchmark data sets and images collected in the field in order to assure robustness during actual farming conditions. Experimental evaluation demonstrate that the proposed system has 95.1% accuracy of controlled data set and 92.3% accuracy of field data while also keeping low calculation. The results present that useful plant disease diagnosis can be achieved with interpretable and efficient artificial intelligence models, giving rise to feasible support for agricultural applications.

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ChurnShield: An Intelligent Framework for Early Detection and Prevention of Telecom Customer Churn

Publisher: IEEE Cite This PDF

M. Babavali ; Pandurangaraju B ; J. Narasimha ; C.H.Pavan Kumar ; D. Rohith ; D.S Mahammad Saifulla All Authors

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V. Conclusion and Futurework

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Abstract:
The telecommunications industry is competitive and the cost of customer acquisition is high hence the need to develop high retention strategies. Nevertheless, severe imbalance in the classes and the accuracy paradox in the churn data tend to undermine the process of identifying at-risk customers. This paper presents a proactive hybrid intelligent platform, ChurnShield, which is meant to address these issues. Unlike other methods, ChurnShield uses the synchronized SMOTEENN (Synthetic Minority Over-sampling Technique and Edited Nearest Neighbours) pipeline to achieve a balanced distribution of classes and optimized decision boundaries by eliminating overlapping noise. In order to maintain the integrity of the experiment and prevent information leaks, feature selection by Lasso is done before data balancing. The Random Forest ensemble when tested on the Telco Customer Churn dataset had an F1-score of 95% on the churn-class and a total accuracy of 93 %. The results indicate a noticeable quantitative improvement relative to the traditional approaches, and high ROC-AUC (0.98) and PR-AUC (0.96) indicators prove this fact. Moreover, a real-time operational dashboard which calculates tenure and contract type as main risk factors is built in the system, which allows focusing on mitigating revenue leakage. Having entered the gap between the imbalanced data processing and real-time deployment, ChurnShield provides the effective solution to the problem of high-precision churn forecasting.

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An Interpretable AI-Based Multimodal Approach for Lung Cancer Screening Using CT Scans and Clinical Data

Publisher: IEEE Cite This PDF

A. Ramesh Babu ; P Phanindra Kumar Reddy ; O. Navya ; P. Srinuvasulu ; G. Roopa Devi ; A. Pavan Kumar All Authors

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Abstract:
Lung cancer continues to be one of the leading causes for cancer-related deaths globally, the primary reason is due to late stage of diagnosis and the lack of efficient screening methods. Although the investigation of artificial intelligence for automated lung cancer detection has been investigated, many studies have been established based on either imaging data or clinical information and often have limited interpretability of the model, limiting the model's practical use in the clinic. This work introduces an interpretable multimodal lung cancer detection strategy, that uses a combination of radiological features that are extracted from chest computed tomography (CT) scans, with structured clinical features composed of demographic and lifestyle-related risk factors. Nodule associated features are extracted from CT images and class imbalance in clinical data is addressed using Conditional Tabular Generative Adversarial Network (CTGAN). The resulting multimodal representation of features is then classified using a Random Forest model to allow for transparent and reliable method of prediction. Experimental evaluation based on a public open lung cancer dataset shows that the proposed approach is able to achieve better performance in terms of accuracy and sensitivity with respect to unimodal models and traditional oversampling methods, while ensuring low computational complexity. The proposed system aims to facilitate screening-oriented decision support in terms of interpretable risk evaluation and patient-centered presentation of outcomes.

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SpamSentry: Real Time Detection of Spam on Social Media Using Intelligent Monitoring Tools

Publisher: IEEE Cite This PDF

S.Ashok Kumar ; Pandurangaraju. B ; A. Praneeth Reddy ; Y. Nandhitha ; S.Venkata Praballika ; U.Pavan Kalyan All Authors

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Abstract:
The rapid rise is come with in a torrent of content. 1generated by users contributing to the fact that it becomes harder to distinguish between spam. and real posts. Since spam does not only reduce user interface but in addition to this is a danger to safety dependable current detection. systems are necessary. This project presents a new tool that can be used to detect spam messages quickly to solve this issue. To identify complex patterns suggesting of spam the system makes use of ensemble models like XGBoost as well as Gradient Boosting which are trained on a prepared dataset of social media posts. To provide high quality input for classification, the data is prepared for computation through text cleaning, encoding and vectorization. The analysis of the model shows exceptional outcomes with the general accuracy of 98.9 percent and good levels of precision and recall, which is a sign of successful spam detection. Real time social media content input and classification results are made possible by combining the system with simple interface. A user interface and strong ensemble models work together to offer a scalable and useful attack monitoring and prevention solution. While providing the potential for more enhancements like global spam detection, deep learning integration and broad implementation to address changing challenges in social media security this project shows the success of modern methods for machine learning for enhancing online safety and user experience.

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Start-Wise Ai: Predicting Startup Success or Failure Using Data-Driven Insights

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N. Swathi ; M. Joshna ; M. Prathyun Kumar Reddy ; P. Suresh Babu ; P. Supraja ; V. Revanth Kumar All Authors

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Abstract:
This paper illustrates the end-to-end Deployable Machine Learning system, India Startup Survival Predictor. The objective of the framework is to evaluate the survival of startups in the Indian startup ecosystem. The created system uses a synthetic benchmark dataset that has financial and non-financial characteristics such as team sizes, prior entrepreneurial success of team founder, government schemes, incubator/accelerator association, product maturity, and market presence. The model based on the Random Forest is very much generalized and robust. Global Importance of Features Explainability explains an integrated Explainable AI prediction method in a way that analyzes the global importance of features. The framework generates actionable outputs: survival probability score, core competencies, potential red flags, and strategic recommendations, providing founders/operators with prescriptive decision guidance. The framework is made accessible via an integrated Streamlit web interface for exploratory analysis and FastAPI backend for API access. Significant consideration is also given to research and educational purposes: modularity allows easy replacement of synthetic data with real-world datasets (src: AngelList India, Startup India, DPIIT) and integration of additional interpretability techniques. Ultimately, this study presents a pragmatic, explainable, India-specific DSST tool that enhances transparency in startup survival evaluation and facilitates informed strategic intervention.

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A Comparative Study of Lightweight Deep Learning Models for Real-Time Wildfire Detection with Explainable AI

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Pandurangaraju. B ; S. Ashok Kumar ; Z. Venkata Rajesh ; G. Santhosh ; N. Guru Vethaswini ; M. Karthik Reddy All Authors

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Abstract:
Wild fires are one of the major environmental hazards that cause destruction of the ecosystem, wild animals and human habitats. It ought to be that the early detection systems should serve towards the abatement of the havoc that ensues as a result of such tragedies. To some extent, the solutions provided in this paper will be suggested as a hybrid lightweight architecture of deep learning in detecting wildfire in real-time as I will combine the solutions of the EfficientNetV2, MobileNetV2, and Explainable AI (XAI) in this paper. The proposed model categorizes the photographs of a forest as Fire and No Fire. The models were trained on publicly available Kaggle dataset, however, there were equal number of fire and non-fire images. Such common measures as accuracy, precision, recall and F1-score were estimates on which the work of the framework was estimated. EfficientNet V2 reached 71 percent, mobile net V2 reached 97 percent and regular CNN model reached 93 percent. The system was also made more interpretable by offering the visual clarification on the regions in the image which had an effect on the projections made by the model through the Grad-CAM. The idea is to make an effective, speedy and easy wildfire identification framework that may be installed in real time detection and preventive schemata.

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Deep Learning Models for Smart Farming: Crop Monitoring and Yield Prediction with Mobilenet

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S. Ashok Kumar ; Fahimuddin Shiak ; N. Sumalatha ; S. Nanda Kumar Reddy ; Y. Ganga Bhavani ; A. Balaji Kumar Reddy All Authors

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Abstract:
The paper is on the use of AI to enhance the productivity of farming through crop recognition by automation through deep learning models. EfficientNetB0, MobileNet, ResNet50V2 and InceptionV3 were four architectures and their comparison as the classifier of agricultural crop on the basis of image data. The models have been chosen since they are applicable in categorizing images. The methodology involved: preprocessing of the data, training the model and assessing its performance by the accuracy of the validation and the loss. The results showed EfficientNetB0 was the best based on the accuracy of validation of 0.75 and MobileNet of 0.68. ResNet50V2 and Inception V3 got lower scores of 0.61 and 0.55 respectively. Loss in validation of 0.4 was also lowest with EfficientNetB0 and InceptionV3 had the highest loss of 3.5. These findings show that EfficientNetB0 is the most satisfactory model in the classification of crops and it provides a decent starting point in the application of AI in agriculture in future.

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SmartVisionGuard: AI Powered Weapon Detection and Crowd Monitoring with Integrated Surveillance Intelligence

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Abstract:
The limitations of traditional cameras and sensors which mainly rely on personal inspection and are sensitive to exhaustion, delays and mistakes have made it more difficult to ensure safety in packed public places like schools, travel hubs and community gatherings. In light of the urgent need for more intelligent security solutions this study suggests an intelligent monitoring framework that immediately recognizes faces, detect weapons and keep an eye on crowds. The system uses deep learning techniques for object detection. During evaluation a convolutional neural network model with an accuracy of 98.9% showed accurate performance in identifying potential risks. Advanced crowd estimate and heatmap visualization techniques are combined with weapon detection to track the number of people and identify unusual activity areas. In order ensure immediate action a complex alert system has been included to immediately alert officials when unusal items are detected. By identifying people who have been placed on alert lists facial recognition modules provide a further layer of security by acting as preventative measures. According to the findings integrating detection, monitoring and recognition into a single system greatly improves alerting capabilities, reduces dependence on manual tracking and permits quick data driven responses.

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Feature-Optimised Gradient Boosting for Accurate and Efficient Network Intrusion Detection

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Abstract:
The rapid rise in cyber threats and increasing complexities of network environments necessitate intrusion detection systems (IDS) that are intelligent, adaptive, efficient, and effective. This paper proposes a hybrid PFI-XGBoost framework which combines the use of Permutation Feature Importance (PFI) for feature optimisation and the XGBoost classifier for enhancing real-time network intrusion detection. The methodology describes a complete data pre-processing pipeline inclusive of data cleaning, outlier removal using the Interquartile Range (IQR), class balancing using SMOTE, and feature selection with PFI, to retain only the informative and uncorrelated network features. The optimized features represent important behaviours at the packet and session level. The optimised features are then used to train the XGBoost Model, which allows us to exploit the inherent potential of XGBoost, which uses gradient boosting and regularisation, and classifies network traffic. The results demonstrate that the hybrid PFI-XGBoost framework achieves an accuracy of 95.30%, precision of 0.9432, recall of 0.9421, and an F1-score of 0.9532, on a standard test dataset of CSV files, comparative to standard models for IDS-type classifications, while also demonstrating computational efficiency to allow for real-time deployment. The results demonstrate the effects of feature-level optimization on better detection performance and reduced false positives, thus providing a scalable, comprehensive IDS solution. The proposed approach offers a novel, practical, and highperformance solution for modern cybersecurity systems, with potential extensions into adaptive learning and deployment in IoT and SDN environments.

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A Hybrid Machine Learning Approach for Accurate Classification of Heart Failure

Publisher: IEEE Cite This PDF

S. Prasanna ; Fahimuddin Shaik ; A. Venkata Anand Kumar Reddy ; C. Navitha ; S. Venkata Siva Reddy ; M. Venkata Subhash All Authors

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I. INTRODUCTION

II. LITERATURE SURVEY

III. DATA COLLECTION AND PREPROCESSING

IV. PRINCIPLES AND METHODS

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Abstract:
Heart failures occur as crisis conditions and are often due to cardiovascular disorders with a great danger, being among the top causes of death globally. On-the-fly judgments with respect to the outcome of the patient would, therefore, make it possible to administer a more exact treatment within a very short window for enhanced survival of the patient even in the short run. The author is concerned about improving the ML methodologies introduced for better classification results for heart-failure patients. The datasets had twelve clinical attributes considered important to judge the level of risk possessed by the patient: age, blood pressure, ejection fraction, serum creatinine, and so on. For better predictions, two classifiers are considered: Decision tree classifier and the deep LSTM network. LSTM training was integrated with PSO to optimize hyperparameter tuning for the LSTM leading to better convergence and generalization. LSTM with PSO act as workhorses for grasping complex patterns in datasets and, therefore, predicting them with high accuracy. These are evaluated and compared by the common performance indices, i.e., accuracy, precision, recall

Published in: 2026 IEEE International Conference for Convergence in Computing Technology (I3CTCON)

Date of Conference: 14-15 March 2026

DOI: 10.1109/I3CTCON68242.2026.11507353

Date Added to IEEE *Xplore*: 11 May 2026

Publisher: IEEE

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AI Models for Healthcare Continuous Diagnostic Efficiency and Treatment Optimization

Publisher: IEEE Cite This PDF

S Ashok Kumar ; Pandurangaraju B ; Fahimuddin Shaik ; K Durga Sireesha ; V. Akash ; B.Chennakesava Reddy All Authors

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I. Introduction

II. RELATED WORK

III. DATA COLLECTION & PREPROCESSING

IV. PROPOSED METHODOLOGY

V. IMPLEMENTATION

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Abstract:
Health workers increasingly want the speed, flexibility and accessibility that is necessary for effective decision-making because conventional methods do not provide these at levels of complexity to which healthcare testing and medical planning have now evolved. We will introduce a novel and globally interpretable artificial intelligence model for real-time medical enhancement and diagnostic performances. Giving doctors smart systems that are great not only in prediction but also give explanation which would be understandable for them in order for them to apply the patients adequately minds this. Our solution employs an ensemble strategy merged with deep learning to process various modalities of patient information, including images, clinical notes, and streaming sensor data, and exploits tailored layers that identify patterns in the health state of each patient. Such a type of focused visualization and SHAP-based feature identification maintains the interpretability ability in order to assist users with the comprehension of what the good dimensions of evaluation are. Feature-Anatomical Sites: Streamlit interface supports streamlining existing detections, visualizations, and customized treatment suggestions with ease manners of straightforward implementations. The model, from the experimental results, can reach 98.9% accuracy to ensure its reliability and clinical utility. The system concludes by giving a comprehensive approach that combines clarity, customization, and accuracy in enhancing medical outcomes, improving test accuracy, and giving more confidence in artificially intelligent medicine.

Published in: 2026 IEEE International Conference for Convergence in Computing Technology (I3CTCON)

Date of Conference: 14-15 March 2026

DOI: 10.1109/I3CTCON68242.2026.11507681

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Retinal Disease Diagnosis Using Multimodal Deep Learning with Clip-Based Fusion

Publisher: IEEE Cite This PDF

Pandurangaraju B. ; S. Ashok Kumar ; Aritakula Haarika ; Pathakunta Mahendra ; P. Mohammed Arshad Ali ; Y. Keerthi All Authors

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III. Existing System
IV. Proposed Work
V. Literature Survey
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Abstract:
Early identification of retinal disorders, such as diabetic retinopathy, glaucoma, and age-related macular degeneration, is crucial to avoid irreversible vision loss. Nevertheless, traditional screening methods need clinical skills and are influenced by the variability of the observer. Most of the currently available automated systems are single-modality image-based, which limits their ability to capture the context that is clinically relevant from the surroundings. In order to address this issue, we put forward a new multimodal deep learning architecture that integrates fundus image features obtained by U-Net segmentation and ResNet-based feature extraction with semantic metadata embeddings via CLIP-based fusion. The combined embedding space makes it possible to better characterize the disease by simultaneously capturing the retinal structures that are anatomical and the patient-specific textual descriptors. An experimental evaluation performed on the real-world retinal image dataset shows that the proposed model is capable of achieving 92.6 % accuracy, 92.4 % precision, 91.3 % recall, and 91.4 % F1-score, which is $6-8\%$ better than traditional single-modality systems. Interpretability is also enhanced by the use of Grad-CAM visualization and an interactive Streamlit interface, which can be of great help to the clinical professionals. These findings demonstrate that the suggested multimodal method can be considered a technically and clinically viable solution for the reliable automated retinal disease diagnosis.

Published in: 2026 International Conference on Computing Theory and Wireless Communications (ICCTWC)

Date of Conference: 01-02 April 2026

DOI: 10.1109/ICCTWC68241.2026.11583295

Date Added to IEEE *Xplore*: 06 July 2026

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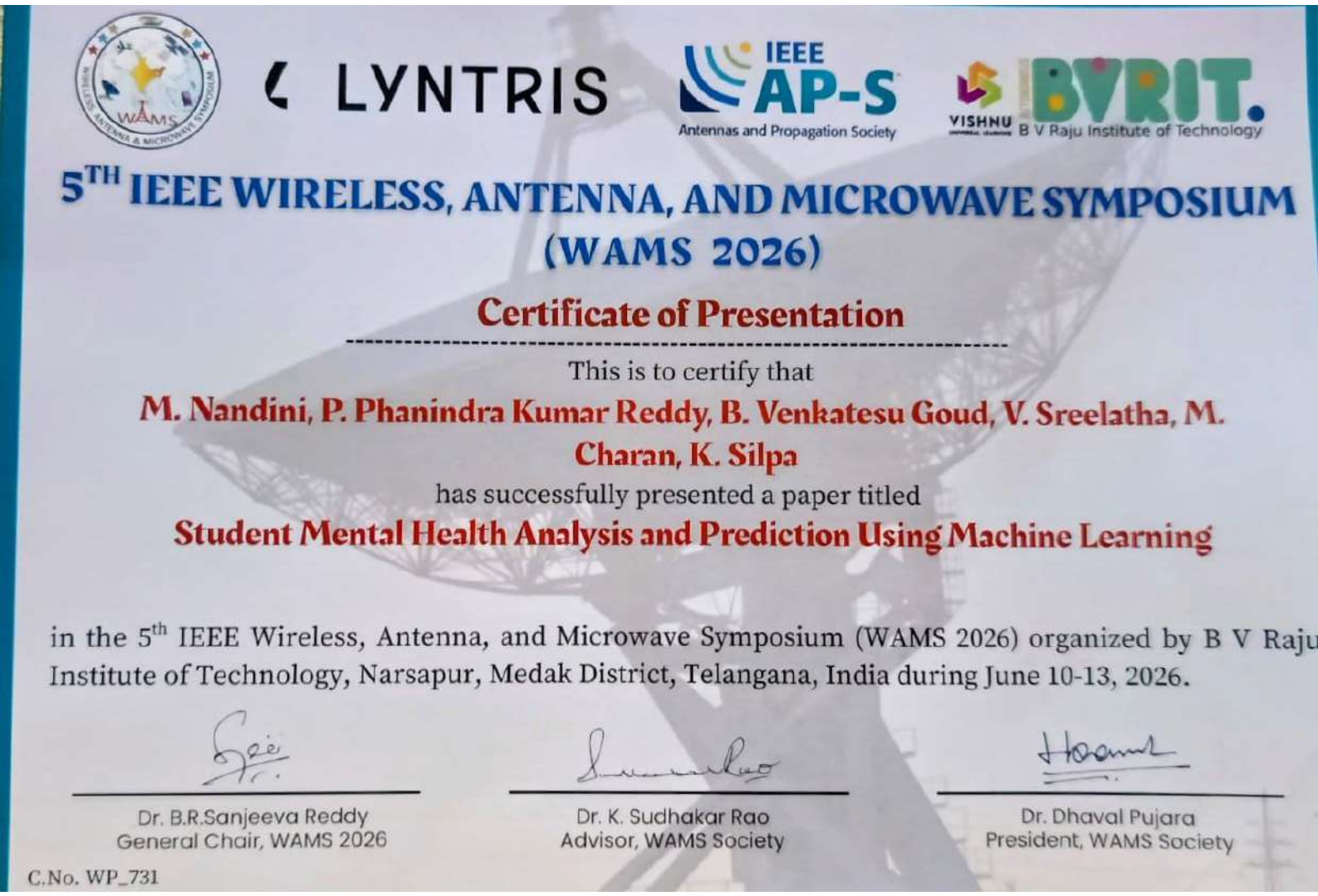

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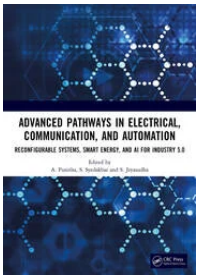

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Edition	1st Edition
First Published	2026
Imprint	CRC Press
Pages	8

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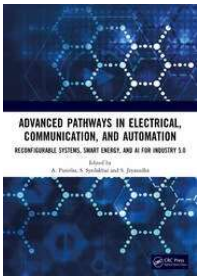

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Pages	9

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Predictive Modeling of Credit Risk in Banking Systems Using a Hybrid SVM–Random Forest Approach

Publisher: IEEE Cite This PDF

U. Naresh Kumar ; T. Gangadharam ; K S S Narayana ; Jafersadhiq A ; M. Sucharitha ; Abhishek Tripathi All Authors

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II. Literature Survey
III. Proposed System
IV. Result and Discussion
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Abstract:
In financial systems, credit risk refers to the possibility that a debtor would fail to fulfill their agreed-upon commitments. Credit issuance is a core function of modern banks and involves assessing various criteria. However, repayment issues offer considerable risks to banks, hence comprehensive risk management is required. Because of the close relationship between credit risk and prospective investment returns, institutions that practice good risk control undertake comprehensive evaluations. In order to predict credit risk using various datasets, this research investigates the function of data preparation. An approach to enhance prediction performance is suggested, which involves combining a stacked classifier method with a filter-based feature selection methodology. This method combines the predictions of two different models, RF and SVM, and then uses a Bayesian average to combine the two. Results from a comparison of RF, SVM, and their ensemble reveal that the suggested SVM-RF model outperforms the others. Banks will be able to better identify high-risk borrowers and increase financial stability thanks to the results, which show that ensemble learning and feature selection, can greatly improve credit risk assessment with a prediction rate of 94.53%.

Published in: 2025 5th International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT)

Date of Conference: 12-13 September 2025
DOI: 10.1109/ICERECT65215.2025.11378182
Date Added to IEEE *Xplore*: 12 February 2026
Publisher: IEEE
ISBN Information:
Conference Location: MANDYA, India

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Hybrid Knowledge Graph and Graph Neural Network Framework for Context-Aware Consumer Behavior Modeling in E-commerce

Publisher: IEEE Cite This PDF

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Abstract:
More and more people are replacing traditional shopping methods with online payments and purchases because the Internet and web technologies are used all over the world. This Paper Proposes Knowledge Graph and Graph Neural Network framework for Context-Aware Consumer Behavior Modelling in E-commerce. The framework combines deep relational learning through GNN with semantic entity relationships from a knowledge graph. Using a dataset, this model uses TF-ICF Feature extraction for the textual comments and Structural graph representation for entity embeddings. The experimental findings show that the suggested KGGNN model successfully captures intricate patterns of behaviour and achieves a prediction accuracy of 97.12%. The results show that e-commerce consumer behaviour modelling is greatly improved with the help of a framework that combines knowledge graphs with graph neural networks. This framework can improve recommendation systems, targeted marketing, and the general performance of the platform.

Published in: 2026 1st International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETAACT)

Date of Conference: 10-11 April 2026
DOI: 10.1109/ETAACT69135.2026.11541466
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Publisher: IEEE
ISBN Information:
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Edge-Assisted Network Traffic Anomaly Detection Using Random Forest for Autonomous Systems

Publisher: IEEE Cite This PDF

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I. Introduction

II. Literature Review

III. Methodology

IV. Results

V. Conclusion and Future Work

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Abstract:
The rapid development of autonomous systems through IoT-based technologies has led to increased susceptibility to network traffic anomalies as well as cyberattacks. Thus, the need for real-time intrusion detection is critical. This study proposes the development of an edge-assisted anomaly detection approach through the use of a Random Forest classifier. The proposed approach is validated through the use of a dataset for network traffic anomaly detection. The dataset used in the study consists of 1000 instances of data as well as 17 different traffic features. The dataset is classified as a binary class problem. The proposed approach is validated through the use of stratified data splitting as well as class weighting techniques. The proposed approach is validated to have an accuracy of 97.8 % as well as high precision, recall, as well as ROC-AUC. The proposed approach is thus efficient for use in autonomous systems as well as in IoT-based networking systems.

Published in: 2026 2nd International Conference on Intelligent Systems and Computational Networks (ICISCN)

Date of Conference: 24-25 April 2026

DOI: 10.1109/ICISCN67954.2026.11566561

Date Added to IEEE *Xplore*: 23 June 2026

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I. INTRODUCTION

II. LITERATURE REVIEW

III. PROBLEM STATEMENT

IV. RESEARCH QUESTIONS

V. RESULTS AND CONCLUSION

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Abstract:
Cloud computing is the basis of the modern business infrastructure that offers cost effectiveness, scalability, and flexibility. The distributed and scalable nature of cloud systems, however, adds to the attack space and introduces new vulnerabilities. This journal article proposes a comprehensive infrastructure of AI-based cyber resilience that focuses on preventing threats in advance and advanced intrusion identification. The framework provides a privacy-sensitive and customizable security architecture that integrates innovative machine learning (ML), deep learning (DL), federated learning (FL), reinforcement learning (RL), and explainable AI (XAI). Multiplexing Distributed streaming DSP systems such as Spark streaming, Apache kafka, and Apache Flink are used to detect low latency anomalies. Tamper-proof security logs are kept with the help of blockchain technology to make sure accountability and compliance.The framework proposed based on machine learning (ML) and deep learning (DL) models will be used to monitor the network traffic, application logs, and user behaviors to detect the zero-day attacks, insider threats, and polymorphic malware early. A federated learning approach is incorporated to maintain data privacy while enabling collaborative threat intelligence sharing across distributed cloud nodes.

Published in: 2026 International Conference on Computing, Electronics & Communications Engineering (ICCECE)

Date of Conference: 06-07 February 2026

DOI: 10.1109/ICCECE69715.2026.11493037

Date Added to IEEE *Xplore*: 28 April 2026

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IoT-Enabled Heart Disease Risk Prediction Using Machine Learning…

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Deep Learning Models for Accurate and Efficient Classification of Brain Disorders Using MRI Scans

Lecture Notes in Electrical Engineering • Conference Paper • 2026 •
DOI: 10.1007/978-981-95-4452-3_31

Krishna J. [a] ; Eswar, Ravipati [b] ; Areef Basha S.M.D. [c] ; Jagan M. [c] ; Harsha Niketh R. [c]
[a] Annamacharya University, Andhra Pradesh, Rajampet, India

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Document Impact Cited by (0) References (10) Similar documents

Abstract

One of the biggest challenges in the medical industry is accurately classifying brain illnesses using MRI images, especially when it comes to identifying particular tumor types such pituitary tumors, meningiomas, and gliomas. This paper introduces a sophisticated deep learning approach involving convolutional neural networks (CNN) to automatically and effectively classify brain cancers. The goal of the project is to improve diagnostic capabilities by determining the type of tumor and where it is located in the brain, in addition to forecasting whether a tumor will be present. The findings show that these models have the potential to greatly increase diagnostic accuracy for classifying brain tumors, providing physicians with a trustworthy instrument to accurately identify tumor kinds and the areas they affect. This strategy could significantly advance medical imaging and AI-driven healthcare solutions by improving early diagnosis and individualized therapy planning. The three main stages of the suggested methodology are performance evaluation, model training, and data preprocessing. To manage the intricacy of MRI data, we use data augmentation techniques and guarantee class balance at the preprocessing stage. We then use four deep learning models, each of which is used for its feature extraction and classification capabilities: CNN, MLP, Inception V3, and AlexNet. To guarantee accurate model evaluation over several datasets, let's take a look how k-fold cross validation is done. Finally, we perform a comparative analysis amongst the models according to classification metrics including accuracy, precision, recall, F1 score, and AUC score. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2026.

Author keywords

Accuracy; AlexNet; Brain_tumor_detection; F1_score; Glioma; Inception-V3; Magnetic_imaging_resonance (MRI); Meningioma; Multi-layer-perceptron; Pitutary_gland_tumor; Precission; Recall; S_CNN

Indexed keywords

Engineering controlled terms

Brain; Classification (of information); Computer aided diagnosis; Deep neural networks; Diseases; Learning systems; Magnetic resonance imaging; Medical imaging

Engineering uncontrolled terms

Accuracy; Alexnet; Brain tumors; Brain_tumor_detection; Convolutional neural network; F1 scores; Glioma; Inception-v3; Magnetic imaging; Magnetic_imaging_resonance (MRI); Meningiomas; Multilayers perceptrons; Pitutary_gland_tumor; Precission; Recall; S_convolutional neural network; Tumour detection

Engineering main heading

Tumors

Corresponding authors

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Affiliation	Team Lead, Annamacharya Institute of Technology and Sciences, Rajampet, India

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Optimizing Crop Yield Forecasts Through Machine Learning Integration of Meteorological and Pesticide Data

Lecture Notes in Electrical Engineering • Conference Paper • 2025 •
DOI: 10.1007/978-981-96-9203-3_27

Hari Krishna T. [a] ; Guru Naga Jyothi M. [b] ; Rizwana S.A. [b] ; Mounika A. [b] ; Bhavitha B. [b] ; +1 author

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Abstract

This analysis presents a robust framework for crop yield prediction using machine learning. The process starts with an exploratory phase, leveraging bar charts, line graphs, and histograms to examine the relationships and distributions of key factors like crop yield, rainfall, pesticide use, and temperature. These visualizations uncover patterns in the data, offering foundational insights to guide model building. The data is then preprocessed, which includes encoding categorical variables and splitting the dataset into training and testing sets. Using the cleaned data, two popular machine learning regression models, XGBoost and Random Forest, are applied to predict crop yield. Performance metrics such as root mean squared error (RMSE) and accuracy gage each model's effectiveness, with XGBoost achieving 96% accuracy and Random Forest slightly surpassing it at 97%. Additionally, scatter plots map the models' predicted values against actual outcomes, offering a clear visual representation of their predictive accuracy. This visual feedback not only clarifies the strengths of each model but also showcases their ability to capture trends in the data. This notebook serves as a comprehensive resource, combining exploratory analysis with advanced machine learning techniques to yield actionable insights and optimize prediction accuracy for crop yield. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2025.

Author keywords

Accuracy; Correlation heatmap; Crop yield prediction; Data visualization; Exploratory data analysis; Feature engineering; Histogram; Machine learning; Model evaluation; Predictive modeling; Random Forest; Regression analysis; Root mean squared error; XGBoost

Indexed keywords

Engineering controlled terms

Crops; Data reduction; Data visualization; Learning algorithms; Learning systems; Machine learning; Mean square error; Pesticides; Statistical tests; Visual communication; Visualization

Engineering uncontrolled terms

Accuracy; Correlation heatmap; Crop yield; Crop yield prediction; Exploratory data analysis; Feature engineerings; Heatmaps; Histogram; Machine-learning; Model evaluation; Predictive models; Random forests; Root mean squared errors; Xgboost; Yield prediction

Engineering main heading

Regression analysis

Corresponding authors

Corresponding author — M. Guru Naga Jyothi

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Multi-Agent Reinforcement Learning Optimizing Cloud Resource Scheduling Efficiently

Proceedings of 2025 10th International Conference on Science Technology, Engineering and Mathematics, ICONSTEM 2025 • Conference Paper • 2025 •
DOI: 10.1109/ICONSTEM65670.2025.11374729

Bhaurao, Phole Kamal[a] ; Sawant S.B.[b] ; Umayal A.R.[c] ; Surekha, Swarna[d] ; Beg, Mirza Samiulla[e] ; +1 author

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Abstract

In this research, we present Proximal Policy Optimization (PPO) framework for Multi-Agent Systems (MAPPO) with Graph Neural Network (GNN) for online cloud resource allocation on heterogeneous infrastructure. We also use Ray RLlib distributed training environment for this (with every server represented as an intelligent agent acting in decentralized mode (Centralized Training with Decentralized Execution (CTDE) paradigm). Interagent dependencies are modelled using attention mechanisms and policy gradient calculation is done by the architecture using entropy regularized Stable-Baselines3. Custom operators provide real-time decisions from the scheduling point of view to Kubernetes orchestration with a maximum of 100 thousand task requests per hour. It utilizes time-series forecasting to model prediction workload and TensorRT optimization for below 10 ms inference latency. Deployed on Google Cloud Platform with multi-regional cluster structure, the framework reduces the resource wastage by 67 percent and improve the SLA compliance by 54 percent as compared to traditional heuristic scheduler. Horovod has the feature of making synchronization of weights scalable with 128 training nodes. © 2025 IEEE.

Author keywords

GNN; Horovod; Kubernetes; MAPPO; RLlib; TensorRT

Indexed keywords

Engineering controlled terms

Cloud computing; Intelligent agents; Neural networks; Online systems

Engineering uncontrolled terms

Cloud resource scheduling; Decentralised; Graph neural networks; Horovod; Kubernetes; MAPPO; Multi-agent reinforcement learning; Policy optimization; Rllib; Tensorrt

Engineering main heading

Multi agent systems

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Author keywords

Indexed keywords

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Deep Fake Image Detection Using Deep Learning

2025 6th International Conference for Emerging Technology, INCET 2025 • Conference Paper • 2025 • DOI: 10.1109/INCET64471.2025.11140346

Sivaiah, B. Venkata [a] ; Narayana, C.V. Lakshmi [b] ; Prasanna, Konga Lakshmi [c] ; Vinathi, Duggasani [c] ; Hemanth K.S. [c] ; +1 author

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Abstract

Deep fake images trigger doubts regarding media trustworthiness as well as they compromise public confidence and create security threats. A new deep fake detection system that uses EfficientNetV2 serves as an efficient method for this task. The choice of EfficientNetV2 stems from its improved feature extraction capabilities and its capability to compute quickly as well as identify minor artifacts in facial features and textures and light changes. Extensive testing of the methodology occurs as we examine Accuracy and Precision and Recall with a geometric model on actual image datasets and modified versions of these images. Effective preprocessing and an innovative architecture enhance detection precision, enabling real-time application. The method reinforces digital forensics investigations which helps both ethical and security-focused institutions. © 2025 IEEE.

Author keywords

artificial intelligence; cybersecurity; Deep fake detection; digital forensics; EfficientNetV2; image manipulation; machine learning; media authenticity

Indexed keywords

Engineering controlled terms

Computer crime; Computer forensics; Cybersecurity; Electronic crime countermeasures; Fake detection; Feature extraction; Image enhancement; Learning systems; Network security; Security systems; Statistical tests

Engineering uncontrolled terms

Cyber security; Deep fake detection; Detection system; Efficientnetv2; Fake detection; Image detection; Image manipulation; Machine-learning; Medium authenticity; Security threats

Engineering main heading

Deep learning

Corresponding authors

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Abstract

Author keywords

Indexed keywords

Corresponding authors

AI Smart Prescription Guide For Safer and Clearer Healthcare

Publisher: IEEE Cite This PDF

T. Hari Krishna ; Rupasree. K ; Bhavya. G ; Rajesh. K ; Arun Kumar. B ; Rajesh. D All Authors

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Document Sections

1. Introduction
2. Related Works
3. Proposed Work
4. Result Analysis
5. Conclusion

Authors

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Keywords

Metrics

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Abstract:
Medication errors normally occur when medical prescriptions that are written by hand are read inaccurately. This exposes the patients to severe risks and reduces effectiveness of treatment. Complex dosage details, new medical terminologies and illegible handwriting are a challenge to many individuals and thus result in misuse of the medication. To solve this problem, this paper introduces an AI-powered Smart Prescription Guide, which translates handwritten prescriptions to clear, structured, and readable data. The system with Natural Language Processing (NLP) and Optical Character Recognition (OCR) technologies extracts and interprets medical text in prescription images. It recognizes the name of the medications, important safety instructions, and puts the dosages in readable format and simplifies complex terms. The system equally provides voice-assistance and multi-lingual support and is useful among the people with visual or reading impairments and those with varying language backgrounds. It also has a medication safety feature that compares the medications extracted to trusted pharmaceutical data. The feature assists in the detection of possible drug interactions, allergies, and dosage errors. The system enhances the adherence to medications and minimizes the possibility of dangerous errors through the use of alerts and reminders. On the whole, this solution will encourage safer, more accessible, and more technology-driven healthcare practices as well as enhance clarity of prescriptions.

Published in: 2026 International Conference on Computing, Electronics & Communications Engineering (ICCECE)

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Improving Global Supply Chain Security and Transparency through Blockchain and IoT Integration with Deep LSTM and RNN

3rd International Conference on Data Science and Information System, ICDSIS 2025 • Conference Paper • 2025 • DOI: 10.1109/ICDSIS65355.2025.11070523

Penchalaiah N.[a] ; Malathi M.[b] ; Kalinskaya, Ekaterina[c] ; Senniappan, Vijayalakshmi[d] ; Sridhar D.[e] ; +1 author

[a] Annamacharya University, Department Artificial Intelligence and Machine Learning, Rajampet, India

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Abstract

Transparency is essential for global supply chain resilience, sustainability, and corporate governance. Rapidly collecting, transferring, integrating, and analysing large data sets improves supply chain transparency and security. Emerging technology can improve quantity and quality transparency. However, how global firms use these technologies to improve supply chain transparency and sustainability is unclear. The proposed approach improves global supply chain transparency and security through data preprocessing, feature engineering, and model training. The system cleans and prepares input data to ensure quality. A supply chain management predictive analysis method is implemented next in feature engineering. The final phase is creating LSRN, a unique deep learning model for SCM transparency data augmentation and prediction. Experimental results from different SCM stages confirmed the proposed method's efficacy. The proposed strategy has a 98.76% accuracy rate, which is higher than other methods. The findings highlight the need to integrate new technology to improve global supply chain transparency and safety to solve SC sustainability and governance issues.
© 2025 IEEE.

Author keywords

advanced deep learning (ADL); genetic algorithm (GA); global supply chain management (GSCM); internet of things (IoT); supply chain management (SCM)

Indexed keywords

Engineering controlled terms

Deep learning; Engineering education; Internet of things; Learning systems; Sustainable development; Transparency

Engineering uncontrolled terms

Advanced deep learning; Chain management; Feature engineerings; Genetic algorithm; Global supply chain; Global supply chain management; Global supply chain securities; Internet of thing; Supply chain management

Engineering main heading

Supply chain management

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Predicting Childhood Anemia Prevalence with Machine Learning: Evidence from Global Nutritional Data

Proceedings of the 6th International Conference on Inventive Research in Computing Applications, ICIRCA 2025 • Conference Paper • 2025 • DOI: 10.1109/ICIRCA65293.2025.11089631

Anjanamma C.[a] ; Jyotsna K.A.[b] ; Sravani B.[c] ; Shilpa K.[d] ; Narayana, C. V. Lakshmi[e] ; +1 author

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Abstract

This study develops a predictive framework for childhood anemia prevalence among children aged 6-59 months through machine learning approaches applied to global nutritional data. Analyzing 4,080 observations across multiple countries and time periods, we compared Linear Regression, Random Forest, and Gradient Boosting algorithms to identify optimal predictive models and key determinants. Historical prevalence data emerged as the strongest predictor, with one-year and two-year lagged values demonstrating coefficients approximately ten times larger than any other feature. Linear Regression outperformed more complex algorithms, suggesting that anemia prevalence follows relatively stable temporal patterns. Global prevalence exhibited a steady decline from 39.9% in 2000 to 33.7% in 2019, while significant disparities persist between high-burden nations (Nigeria: 68.9%, India: 53.4%) and low-burden countries (United States: 6.1%). Regional variables contributed minimally to predictive power, indicating that country-specific factors dominate over geographic determinants. These findings underscore the persistent nature of childhood anemia and the importance of tailored, country-specific interventions in high-burden regions. The predictive methodology developed provides a valuable tool for forecasting trends, identifying at-risk populations, and evaluating potential intervention impacts. © 2025 IEEE.

Author keywords

Anemia Prediction; Child Nutrition; Feature Importance Analysis; Global Health; Machine Learning; Nutritional Epidemiology

Indexed keywords

Engineering controlled terms

Forecasting; Linear regression; Machine learning; Nutrition; Prediction models

Engineering uncontrolled terms

Anemia prediction; Child nutrition; Feature importance analyze; Global health; Importance analysis; Machine learning approaches; Machine-learning; Nutritional epidemiology; Random forests; Time-periods

Engineering main heading

Learning systems

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Email address	skanakaprabha@gmail.com

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An Efficient Classification Algorithms for Prediction of Employee Performance Based on Mask Rcnn-Bilstm Technique

3rd IEEE International Conference on Data Science and Network Security, ICDSNS 2025 • Conference Paper • 2025 • DOI: 10.1109/ICDSNS65743.2025.11168777

Pol, Naveen [a] ; Narayana, C. V. Lakshmi [b] ; Priya, Sweta [c] ; Vinothkumar E.S. [d] ; Kumar, B. Rajesh [e] ; +1 author

[a] Isbr Business School, Bengaluru, India

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Abstract

Companies that focus on operational effectiveness value the productivity and efficiency of their workers. When productivity goes up at one level, it often spreads to other levels of the organisation, which increases output. So, you need to check on your employees' work periodically. There isn't just one thing that affects how productive a person is, therefore a structured, data-driven plan is needed. This study shows a step-by-step methodology that includes data preprocessing, feature selection, and model training. Preprocessing makes data that isn't useful or informative for analysis useful and informative. Intensive Optimised Principal Component Analysis (PCA) is recommended for feature selection since it keeps important information while minimising dimensionality. Model training combines MaskRCNN's ability to recognise space with BiLSTM ability to learn over time. This combination may appear oldfashioned compared to newer standalone methods, yet it works effectively here. The model's 98.65 % accuracy made it easier to forecast and evaluate how well employees were doing. These results suggest that the proposed framework can help businesses keep an eye on and increase the efficiency of their workers using advanced, automated technologies. © 2025 IEEE.

Author keywords

bidirectional long short-term memory (BiLSTM); principal component analysis (PCA); recurrent neural network (RNN)

Indexed keywords

Engineering controlled terms

Efficiency; Feature extraction

Engineering uncontrolled terms

Bidirectional long short-term memory; Classification algorithm; Features selection; Model training; Neural-networks; Principal component analyze; Principal-component analysis; Recurrent neural network; Short term memory; Workers'

Engineering main heading

Principal component analysis

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Author keywords

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Papvision: Nextgen Deep Learning Diagnosis of Cervical Cancer from Papanicolaou Smear Test

2025 2nd International Conference on Computing and Data Science, ICCDS 2025 • Conference Paper • 2025 • DOI: 10.1109/ICCDS64403.2025.11209689

Deepika K.R. [a] ; Vijayarani N. [b] ; Raval, Rushi [c] ; Surekha, Swarna [d] ; Karthigai Priya G. [e] ; +1 author

[a] Dayananda Sagar Business Academy, Department of Bca, Karnataka, India

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Abstract

Cervical cancer is a major cause of cancer-related mortality for women globally. Early detection through Pap smear screening enables a much better treatment outcome. However, manual screening is both time-consuming and prone to error. To automate the diagnosis using Pap smear images, a deep learning-based classification system was developed that employed Convolutional Neural Networks (CNNs). The Herlev Pap Smear dataset, with a count of 1917 images, was used to train and evaluate several CNN architectures, including transfer learning strategies. When testing the model with the dataset helps in achieving an accuracy of 95.63%. The methodology performed much better in accuracy, sensitivity, and specificity than conventional classification methods. These findings indicate that the CNN-based systems can supplement traditional cervical cancer diagnoses and assist pathologists with clinical decisions. This dual tone approach helps in providing practical implications of cervical cancer early detection, which paves the path of AI-driven cytology. © 2025 IEEE.

Author keywords

Cervical Cancer; CNN classification; Empirical Analysis; Pap smear; ResN et

Indexed keywords

Engineering controlled terms

Classification (of information); Computer aided diagnosis; Convolutional neural networks; Cytology; Deep neural networks; Learning systems; Statistical tests; Transfer learning

Engineering uncontrolled terms

Cervical cancers; Convolutional neural network; Convolutional neural network classification; Empirical analysis; Learning diagnosis; Neural network classification; NEXTGEN; Pap smear; Resn et; Treatment outcomes

Engineering main heading

Diseases

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Abstract

Author keywords

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Innovative Deep Learning Framework for Accurate Fault Diagnosis in Industrial Systems

Lecture Notes in Electrical Engineering • Conference Paper • 2026 •
DOI: 10.1007/978-981-95-0269-1_31

Harikrishna T. ; Nandini G. ; Peerambi G. ; Manasa N. ; Pallavi B.
Annamacharya Institute of Technology and Sciences, Andhra Pradesh, Rajampet, India

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Abstract

As industrial systems advance towards automation, the demand for accurate fault diagnosis methods grows. Deep learning (DL) faces challenges such as parameter volume and initialization instability. To overcome these hurdles, we proposed a DL framework integrating CNNs and TL. Signals are converted into 2-D images by Continuous wavelet transformation (CWT) improving representation. SVMs replace fully connected layers, enhancing efficiency. The method outperforms classical DL architectures. Validation includes convergence curves, testing reports and confusion matrices. It achieves highest accuracy in cross-domain diagnosis and fault detection. Across mechanical datasets, it sets a new standard for performance. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2026.

Author keywords

Continuous Wavelet Transformation; Convolutional Neural Network; Deep Learning; Fault Diagnosis; Support Vector Machine; Transfer Learning

Indexed keywords

Engineering controlled terms

Convolutional neural networks; Deep neural networks; Diagnosis; Electric fault currents; Learning systems; Signal processing; Support vector machines; Transfer learning; Wavelet transforms

Engineering uncontrolled terms

Continuous wavelet transformation; Convolutional neural network; Deep learning; Fault diagnosis method; Faults diagnosis; Industrial systems; Learning architectures; Learning frameworks; Support vectors machine; Transfer learning

Engineering main heading

Failure analysis; Fault detection

Corresponding authors

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Abstract
Author keywords
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Corresponding authors

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Optimizing Cloud Performance and Energy Efficiency using Proximal Policy Optimization in Reinforcement Learning Techniques

Proceedings of the 6th International Conference on Electronics and Sustainable Communication Systems, ICESC 2025 • Conference Paper • 2025 • DOI: 10.1109/ICESC65114.2025.11212296

Kavitha T. [a] ; Kalyani, Godavarthi Sesha Rudra [b] ; Harikrishna T. [c] ; Dharavatu, Mangamma [d] ; Mohan, Ram [e] ; +1 author

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Abstract

The complexity and dynamism of current cloud data centers requires smart and flexible allocation mechanisms capable of achieving the performance, costefficiency and energy optimization objectives. In this paper, the concept of reinforcement learning (RL) techniques is applied to do the same in the context of creating an adaptive mechanism of managing resources in a cloud computing environment efficiently. In the research, performance of four RL algorithms (QLearning, Deep Q-Network (DQN), Policy Gradient, Proximal Policy Optimization (PPO)) is studied and compared in terms of critical factors: resource utilization, SLA violation rate, energy consumption, and response time and execution time with different workload conditions. A controlled environment simulation was carried out on Cloud Sim/iFogSim extensions to Pythonbased RL libraries. All the considered algorithms exceeded in performance the rest of them as PPO indicated better adaptability, a low number of SLA violations, greater resource utilization persistence, and showed the smallest consumption of energy. The experiment confirms the usefulness of actor, critic-based PPO in cloud that is dynamically driven and a scaleable resource management framework of RL-based practical application in cloud orchestration platforms in real-time applications. © 2025 IEEE.

Author keywords

Cloud Computing; Cloud Sim; Energy Efficiency; Proximal Policy Optimization (PPO); Reinforcement Learning; Resource Allocation; SLA Compliance

Indexed keywords

Engineering controlled terms

Cloud platforms; Energy policy; Energy utilization; Green computing; Natural resources management; Resource allocation

Engineering uncontrolled terms

Cloud sim; Cloud-computing; Energy; Policy optimization; Proximal policy optimization; Reinforcement learning techniques; Reinforcement learnings; Resources allocation; Resources utilizations; SLA compliance

Engineering main heading

Cloud computing; Energy efficiency; Reinforcement learning

Corresponding authors

Corresponding author	T. Kavitha
Affiliation	Srinivasa Ramanujan Institute of Technology, Department of CSE, Anantapur, India
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An Approach to Image Blur Detection and Restoration Using Generative Adversarial Networks

2025 IEEE International Conference on Advanced Computing Technologies, ICACT 2025 • Conference Paper • 2025 • DOI: 10.1109/ICACT67549.2025.11351492

Gayathri, Kunduru [a] ; Prathima Ch. [b] ; Siva N. [c] ; Devi, Bingi Manorama [d] ; Kumar, B. Sunil [e] ; +1 author

[a] G Pulla Reddy Engineering College, Department of Cse, Andhra Pradesh, Kurnool, India

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Document Impact Cited by (0) References (16) Similar documents

Abstract

In real-life situations, photographs taken via handheld or panning objects are frequently beset by motion blur, and they tend to result in low visibility and compromised usability in areas of surveillance, face recognition, and selfdriving capabilities. The proposed project here brings forth an interactive web solution to detect and deblur images through the implementation of Generative Adversarial Networks (GANs) embedded in an interactive frontend created with React, Typescript, and Tailwind CSS.GAN model, which is trained on the GoPro dataset of corresponding blurred and clear streetview images, employs a generator-discriminator architecture where the generator is employed to generate clear images and the discriminator verifies their authenticity, enhancing the model through adversarial learning. The system has an average PSNR of 29.16 and SSIM of 0.7459, demonstrating the ability to recover fine details and textures. In addition, the user interface consists of real-time notifications, dynamic routing, and styled components for natural interaction and rapid image processing with a 4.69 -second average deblurring time. This blending of deep learning and modern web technologies provides a realistic, high-performance motion blur correction solution with potential video deblurring and mobile deployment extensions in subsequent releases. © 2025 IEEE.

Author keywords

feature fusion; feature metrics; histogram similarity; image transformations; perceptual hash similarity; Structural Similarity Index

Indexed keywords

Engineering controlled terms

Deep learning; Discriminators; Face recognition; Image enhancement; Textures; User interfaces

Engineering uncontrolled terms

Adversarial networks; Feature metric; Features fusions; Histogram similarity; Image transformations; Perceptual hash; Perceptual hash similarity; Similarity indices; Structural similarity; Structural similarity index

Engineering main heading

Blending

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Abstract

Author keywords

Indexed keywords

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Real-Time Road Accident Prediction in Smart Cities using a Hybrid Random Forest-LSTM Model

Proceedings of International Conference on Sustainable Communication Networks and Application, ICSCN 2025 • Conference Paper • 2025 • DOI: 10.1109/ICSCN67106.2025.11308195

Krishna J. [a] ; Jain, Jaya [b] ; Arun Raj S.R. [c] ; Josephson, P. Joel [d] ; Kumar, G. Pavan [e] ; +1 author

[a] Annamacharya University, Department of Artificial Intelligence and Machine Learning, Andhra Pradesh, India

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Document Impact Cited by (0) References (19) Similar documents

Abstract

Traffic collisions consistently provide substantial challenges to urban safety, resulting in considerable human and economic costs. Conventional accident prediction techniques frequently fail to identify complex patterns in real-time urban traffic settings. The proposed study handles the issue by presenting a hybrid model that combines Random Forest for feature importance evaluation and Long Short-Term Memory (LSTM) networks for sequential accident forecasting. The suggested method captures essential variables including traffic volume, weather conditions, and geolocation data, which are subsequently preprocessed and sorted utilising Random Forest. The highest-ranked characteristics are subsequently converted into temporal sequences to train the LSTM, enabling the model to identify trends before accident occurrences. Experimental analysis on synthesised real-world datasets reveals substantial improvements in performance compared to conventional models. The hybrid RF-LSTM model attains 96.2% accuracy, 94.8% precision, 95.6% recall, 95.2% F1-score, and 0.981 AUC-ROC, outperforming the performance of Logistic Regression, SVM, and Vanilla LSTM baselines. The suggested study presents a scalable, high-precision framework appropriate for real-time implementation in smart city systems. The model's resilience and predictive capability can greatly aid metropolitan authorities in proactive traffic management, thus minimising the probability and severity of road accidents. These results confirm the practical feasibility and superiority of the proposed method in improving road safety. © 2025 IEEE.

Author keywords

Deep Learning; Ensemble Learning; Geospatial Data; Intelligent Systems; Intelligent Transportation Systems; LSTM; Predictive Modelling; Random Forest; Real-Time Forecasting; Sensor Data; Sequential Modelling; Smart Cities; Time-Series Prediction; Traffic Analytics; Urban Mobility

Indexed keywords

Engineering controlled terms

Accident prevention; Deep learning; Highway accidents; Highway administration; Highway planning; Highway traffic control; Intelligent vehicle highway systems; Learning systems; Logistic regression; Motor transportation; Predictive analytics; Railroad accidents; Random forests; Real time systems; Roads and streets; Urban transportation

Engineering uncontrolled terms

Deep learning; Ensemble learning; Geo-spatial; Geospatial data; Intelligent transportation systems; Predictive models; Random forests; Real-time forecasting; Sensors data; Sequential modeling; Short term memory; Time series prediction; Traffic analytics; Urban mobility

Engineering main heading

Intelligent systems; Smart city

Corresponding authors

Corresponding author	J. Krishna
Affiliation	Annamacharya University, Department of Artificial Intelligence and Machine Learning, Andhra Pradesh, India

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Quantum-Enhanced Federated Learning with Explainable Multimodal Intelligence for Heart Disease Risk Stratification, Progression Analysis, and Personalized Care

Proceedings of the 9th International Conference on Electronics, Communication and Aerospace Technology, ICECA 2025 • Conference Paper • 2025 • DOI: 10.1109/ICECA66444.2025.11383196

Sali, Ramaiah [a]; Harikrishna T. [b]

[a] Annamacharya University, Dept.of Computer Science and Engineering, India

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Abstract

Cardiovascular disease is one of the greatest health challenges for people around the world, and there is an urgent need for new paradigms for data-driven prediction, risk stratification, and individualized cardiovascular care. Traditional diagnostic models rely on known risk factors like varying degrees, reflect the interrelated effects and contributions of genetic, lifestyle, clinical, and environmental factors, and raise questions about data privacy and reproducibility. This study outlines the potential for quantum-enhanced federated Learning (FL) and explainable multimodal intelligence (XMI) to work synergistically as an innovative solution for cardiovascular care. FL enables joint learning from multiple institutions in a networked way without sharing any of the individual patient-level raw data, and quantum computing has the potential to scale for multimodal health data. XMI provides transparency and establishes trust and interpretability for clinical decision making. A systematic review of selected examples indicate how FL and XMI can work together to improve cardiovascular care through the early diagnosis of cardiovascular disease, improved monitoring of disease progression, and the personalization of interventions. This paper highlights exciting opportunities to contribute to advancing precision cardiology through ethical, secure, and scalable AI-enhanced approaches. © 2025 IEEE.

Author keywords

Cardiovascular; data-driven prediction; federated learning; multimodal intelligence; personalization; quantum-enhanced

Indexed keywords

Engineering controlled terms

Artificial intelligence; Behavioral research; Cardiology; Data privacy; Diagnosis; Diseases; Federated learning; Health risks; Medical computing; Quantum computers

Engineering uncontrolled terms

Cardiovascular; Cardiovascular care; Cardiovascular disease; Data driven; Data-driven prediction; Multi-modal; Multimodal intelligence; Personalizations; Quantum-enhanced; Risk stratification

Engineering main heading

Decision making

Corresponding authors

Corresponding author	R. Sali
Affiliation	Annamacharya University, Dept.of Computer Science and Engineering, India

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Dynamic Anomaly Detection for Fire Alarm Fault Identification using a Fuzzy-CNN Based Approach

2025 International Conference on Computing and Communications, COMPUTINGCON 2025 • Conference Paper • 2025 • DOI: 10.1109/COMPUTINGCON64838.2025.11377461

Chittapragada, Hemanand[a] ; Srikanth, Gangapuram[b] ; Khan, Mohammad Rafeek[c] ; Sekhar, P. Chandra[d] ; Narayana, C. V. Lakshmi[e] ; +1 author

[a] Madanapalle Institute of Technology & Science, Department of Computer Science & Engineering, Andhra Pradesh, India

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Abstract

Fires pose a significant risk to human life and economic stability, rendering early detection essential. Conversely, FAS often encounter false alarms and malfunctions due to defective sensors, leading to hazardous delays or unnecessary responses. Due of their inflexible schedules, conventional maintenance procedures cannot accommodate the present condition of these systems. This study proposes an innovative method for FAF anomaly detection by integrating fuzzy logic with convolutional neural networks to address this issue. The method commences with the purification of a high-dimensional dataset by data preprocessing and the selection of features based on correlation. The subsequent phase involves developing a Fuzzy-CNN model that employs fuzzy logic to dynamically train the CNN weights, enhancing the model's adaptability and mistake detection capabilities. The experimental results indicate that the proposed model surpasses conventional classifiers in identifying FAF, with an impressive accuracy of 99.40%. The results indicate that the Fuzzy-CNN architecture is reliable and effective in identifying outliers in fire detection systems. This integrated strategy may yield enhancements in industrial safety and operational efficiency, along with a more responsive and precise method for monitoring FAS, potentially transforming fire safety system maintenance. © 2025 IEEE.

Author keywords

Fire Alaram Detection (FAD); Fire Alarm Sensors (FAS); Urban Utility Tunnel (UUT)

Indexed keywords

Engineering controlled terms

Accident prevention; Anomaly detection; Computer circuits; Fire alarm systems; Fire detectors; Fire protection; Fuzzy inference; Fuzzy neural networks

Engineering uncontrolled terms

Dynamic anomaly detections; Fault identifications; Fire alaram detection; Fire alarm; Fire alarm sensor; Fuzzy-Logic; Human economics; Urban utility; Urban utility tunnel; Utility tunnels

Engineering main heading

Fires

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Abstract

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Classification Techniques in Deep Learning for Automated Diabetic Retinopathy Diagnosis

Publisher: IEEE

Cite This PDF

T Hari Krishna ; P Bhargavi ; G Hemanth Reddy ; K Venkata Guna Sree ; M Babul Reddy ; P Kiran Kumar Reddy All Authors

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III. Proposed Methodology
IV. Experimental Setup
V. Results and Discussion

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Abstract:
The fact is Diabetic Retinopathy (DR) is one of the major causes of visual impairment among diabetic patients globally, and it is manageable through early and precise diagnosis. The current deep learning models have a high false-positive rate and their detection time is long compared to traditional manual screening that is labour-intensive and subjective. In this paper, a new deep learning model will be presented, the MAP Concordance Regressive Camargo Index-Based Deep Multilayer Perceptive Learning Classification (MAPCRCI-DMPLC), to detect DR through automated retinal fundus image detection. The model utilizes three functions, which are MAP-estimated local region filtering to perform a better preprocessing, a hybrid feature extraction with Camargo index to identify the ROI, Concordance Correlative Regression to extract the texture features, and HSV transformation to extract the colour features, and a ultimate classification layer with the efficient Swish activation function. The experiments conducted on a large Kaggle dataset indicated the better performance of MAPCRCI-DMPLC, as accuracy improvement up to 9% was provided, the false-positive rate was reduced significantly greater than 50 times, and the time of disease detection was cut down. This model offers a feasible, accurate and effective remedy of automated and large-scale clinical screening of DR.

Published in: 2025 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA)

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Real-Time Handwritten Digit Recognition Using Explainable and Deployable CNN Models

Proceedings of the 4th International Conference on Intelligent Data Communication Technologies and Internet of Things, IDCIoT 2026 • Conference Paper • 2026 •
DOI: 10.1109/IDCIoT67589.2026.11455721

Krishna J.[a] ; Saketh B.[b] ; Sneha P.[b] ; Sravanthi I.[b] ; Subramanyeswar Reddy I.[b] ; +1 author

[a] Annamacharya University, Dept. of AI&ML, Rajampet, India

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Abstract

Despite the fact that handwritten digit recognition is still a significant issue in pattern recognition and computer vision, it has been used in digital form processing, financial systems, postal sorting, and intelligent human-computer interfaces. In the real world, accurate, lightweight, and explainable models have to be deployed in real-time conditions and explainable, which is recommended by the fact that Convolutional Neural Networks (CNNs) can be deployed in real-time environments and could achieve state-of-the-art accuracy on benchmark datasets like MNIST. The proposed model is the real-time handwritten digit recognition algorithm, which works with the Explainable AI (XAI) models including Grad-CAM, SHAP and LIME and has optimized CNN structures implemented to provide interpretability. It is also possible to optimize the model in order to deploy it using edge and mobile devices through TensorFlow Lite and ONNX. The MNIST and EMNIST dataset experiments operate at a high accuracy of more than 95 percent, and the inference rate on the edge hardware. The proposed framework would be applicable to the real-life application, i.e. automated form processing, smart kiosks, and smart banking due to its transparency, reliability as well as deployability. © 2026 IEEE.

Author keywords

Convolutional Neural Network; Handwritten Digit Recognition; Machine Learning

Indexed keywords

Engineering controlled terms

Character recognition; Convolution; Convolutional neural networks; Human computer interaction; Interfaces (computer); Pattern recognition systems

Engineering uncontrolled terms

Convolutional neural network; Digital forms; Financial system; Form processing; Handwritten digit recognition; Human computer interfaces; Machine-learning; Neural network model; Real- time; Real-world

Engineering main heading

Learning systems

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An Integrated Machine Learning Framework for Multi- Disease Prediction, Medication Reminders & Doctor-Patient Interaction

Publisher: IEEE

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C.V.Lakshmi Narayana ; Chinthakunta Uma Geethika ; Bille Sarala ; Siddi Nishetha ; Amanchi Sai Sumanth ; T H Raju All Authors

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Abstract:
Memory loss, a lack of individual guidance and limited access to quality healthcare resources can all cause individuals having trouble with taking their medications which can result in major health problems. Inspired by the need for better health care this work introduces a healthcare platform driven by AI that combines individual medicine recommendations, multi-disease prediction and doctor consultation support into just one system. Applying machine learning techniques this method develops the top six suggested medications based on symptom related inputs by processing them using NLP techniques like cosine similarity and TF-IDF. A strong reminder feature is also included in the system which automatically updates records after the medication course is finished and sends out email notifications and alerts for doses not taken. Doctors are able to monitor AI recommendations and efficiently provide medication due to a dual platform design created with Streamlit which also gives patients tools for handling prescriptions and consultations. The platform's overall prediction accuracy of 98.9% shows how reliable it is for helping with individual treatments. The technology improves taking their medications, promotes effective doctor patient communication and provides a complete compact solution to improve people's healthcare experiences by integrating intelligent recommendations, automatic notifications and interactive dashboards.

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Date Added to IEEE *Xplore*: 30 April 2026

Publisher: IEEE

ISBN Information:

Conference Location: Tirupati, India

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KDiME-FedX: An Explainable Multimodal Federated Framework for Personalized Kidney Disease Prognosis and Adaptive Care Planning

2026 Innovations in Machine, Engineering, and Digital Conference, IMED 2026 • Conference Paper • 2026 • DOI: 10.1109/IMED68921.2026.11484456

Lakshmi T. [a] ; Harikrishna T. [b]

[a] Annamacharya University, Dept. of Computer Science And Engineering, Andhra Pradesh, Rajampeta, India

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Abstract

Chronic kidney disease (CKD) is increasingly recognized as a global health threat and a major contributor to life-altering morbidities. If left uncommunicated, assessed, and unmitigated, CKD can lead to serious complications and reduce the quality of life for patients and their families. Accurate prognosis of CKD and establishing personalized care planning is important for a better outcome, however, there can be challenges of fragmented data, explainability of data, and patient privacy. The Explainable Multimodal Federated Framework for Chronic Kidney Disease is presented in this review and aims to mitigate challenges of leveraging data in CKD prognostication and care provisioning by implementing federated learning (FL) in a multimodal and explainable manner. FL supports the learning of a model across distributed healthcare institutions while preserving sensitive patient information. The benefits of collaborating with varied data sources optimize prediction for CKD from clinical, imaging, genomics, and nutrition and lifestyle aspects of advanced poor health. Explainable AI models promoting visualization provide characteristics for trust and buy-in for clinicians and patients in shared decision-making. Along with these data-driven approaches, adaptive care planning is a key aspect of KDiME-FedX, such that an individualized approach to adaptive treatment is delivered as a patient-centered intervention as data evolves with the patient's disease trajectory. A systematic review of 52 selected studies identifies future opportunities, challenges and directions for potentially building a framework such as KDiME-FedX. Overall, KDiME-FedX demonstrates a new way forward in precision nephrology while meshing protected health information (PHI), explainability, and patient-centered solutions to the prognosis of CKD and adaptive care provisions across populations. © 2026 IEEE.

Author keywords

accurate prognosis; Chronic Kidney Disease; explainable AI; federated learning; prognostication

Indexed keywords

Engineering controlled terms

Artificial intelligence; Diagnosis; Health risks; Patient treatment

Engineering uncontrolled terms

Accurate prognose; Care planning; Chronic kidney disease; Explainable AI; Global health; Kidney disease; Multi-modal; Patient privacies; Prognostication; Quality of life

Engineering main heading

Decision making

Corresponding authors

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AI-Powered Financial Consultant for Secure and Intelligent Personal Finance Management

Publisher: IEEE

Cite This PDF

Lakshmi H N ; C.V. Lakshmi Narayana ; J. Krishna ; Akula Vishalakshi ; Swama Surekha ; B. Venkata Sivaiah All Authors

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Abstract:
The machine learning-enabled financial advisor detailed in this paper serves to aid users in scholasocially and efficiently organizing and managing personal finances. The advisor is equipped with a secure login system as well as modules for budget creation and management, expense tracking, and automated payment reminders. In addition to assisting users with financial literacy, it contains a set of FAQs and one-on-one modules determining core concepts surrounding investing, aiding in basic understanding. In regards to investing, hybrid LSTM and ARIMA models integrated within the financial advisor help with real time stock analysis as well as with automated portfolio managing. In addition, the system is equipped with advanced financial calculators pertaining to loans, EMIs, SIPs, and fixed deposits, allowing users to plan for various financial strategies. Therefore, the system is able to help users with sound financial decisions for wellbeing.

Published in: 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)

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Publisher: IEEE

ISBN Information:

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Abstract:
Artificial intelligence (AI) and machine learning (ML) are increasingly contributing to emergency medicine [1], [9], [16]. Existing work falls into three broad areas: identifying and predicting disease, predicting patient flow (e.g., admission, discharge, and mortality), and creating automated triage tools. For predictive tasks researchers have employed a variety of techniques from traditional methods such as logistic regression and Naive Bayes to ensemble models like support vector machines, random forests, and neural networks (multilayer perceptrons), and sequence models such as LSTMs based on data sources like electronic health records and imaging. Outcome related studies typically utilize EHRs, lab and vital sign streams and tend to use decision trees, random forests and regression models. Triage oriented work blends patient features (e.g., new vitals and clinical history) with models covering from linear decision rules to sophisticated neural or fuzzy logic approaches. In total, these findings indicate high promise for AI/ML to enhance emergency department decision making, but for reported performance, it is highly dataset size and quality dependent; external validation and prospective testing are required before clinical use.

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Publisher: IEEE

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Abstract:
Intelligent transportation system includes such a vital element as vehicle location prediction, which is required to make campus shuttle services more efficient. Using accurate bus arrival forecasting, reliability will be increased and the waiting time of passengers minimized. Despite their widespread use, traditional methods, including Support Vector Regression (SVR) and time-series models, including ARIMA and SARIMA, however, apply several limitations because they use primarily preceding GPS signals and ignore other factors, including traffic, weather and event-induced inconveniences. The article presents a model of Long Short-Term Memory (LSTM) in regard to multiple sources of data, such as GPS tracks, open APIs data regarding traffic, weather data, such as temperature and precipitation, and event or holiday indicators. Preprocessing of data was performed to create a time-aligned dataset through normalisation of the features, interpolation of the missing values and elimination of irregular time values. As compared to ARIMA and SARIMA that could model seasonal variation albeit with more error on non-normal days, baseline experimentation indicated that SVR performed well on smooth variation and not on sudden disturbance. The trained LSTM model based on historical records and tested on unseen data showed the prediction error that was reduced around 30 to 40 percent over baseline methods. When a ten-minute rain delay was introduced and nine minutes were forecasted by LSTM, two and three minutes were forecasted by ARIMA and SVR respectively. The results indicate that multimodal characteristics and deep learning are more accurate and general predictions of a shuttle arrival. Future research is going to examine broader application in campus transportation systems and streaming live information.

Published in: 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)

Date of Conference: 28-29 January 2026

DOI: 10.1109/ICoECIT68303.2026.11496848

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Publisher: IEEE

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Abstract:
This project presents a user friendly website application which gives the summarization and translation of summarization part.so in short it leverges the two stages process one is summary and another one is translation.summarization will be done using the most versatile and dynamic technique lstm.accessing and understanding long youtube education and documentary related videos is quite difficult even though we know some English some members may not familiar with English languges so translation will be a boon to the user.before summarization transcription will happen , by using youtube trabscriptAPI then it will go to lstm model and gives us summary and it will turn to other languges by using google translator. . [1] [3]

Published in: 2026 International Conference on Smart Futuristic Technology

Date of Conference: 02-03 January 2026

DOI: 10.1109/ICSFT66733.2026.11506821

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Publisher: IEEE

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Abstract:
IoT devices and cloud services are quickly proliferating the networks, exposing them to advanced cyber threats as well as bringing in new requirements for reliable intrusion detection solutions. Traditional approaches often have high false positive rates, limited scalability, and no tamperproof logging capabilities. This study proposed a hybrid system combining blockchain, artificial intelligence (AI), and the Internet of Things (IoT), integrating anomaly detection at the edge level with permanent event logging on the blockchain in cloud-enabled deep learning models. Anomaly filtering is performed through minimal processing at the edge, while LSTM and CNN ensemble models in-cloud, learn higher level representations for accurate anomaly classification. While Blockchain can ensure the integrity of these logs with transparent audit trails, interactive platforms can facilitate real-time monitoring and forensic investigation. Evaluating the proposed framework on CICIDS2018 dataset, achieves 98.1% accuracy, 98.4 % precision, 97.9 % recall, and an F1-score of 98.1 %, and AUC at 0.99 which are better than traditional models like Random Forests, LSTM, autonomous encoder & CNN-LSTM hybrids. The comparison instance shows improved performance, low latency and high reliability The study shows that the hybrid edge-cloud model, established by a Block Chain Network (BCN), minimizes risks in IoT networks' use and enables auditable and scalable supervision with such an infrastructure. These findings demonstrate both the real-world feasibility, and differ positively from existing IDS frameworks.

Published in: 2026 6th International Conference on Trends in Material Science and Inventive Materials (ICTMIM)

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DOI: 10.1109/ICTMIM68190.2026.11508109

Date Added to IEEE *Xplore*: 13 May 2026

Publisher: IEEE

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Abstract:
Vitamin deficiencies, if undetected, can lead to long-term health complications including fatigue, weakened immunity, and organ dysfunction. Conventional diagnostic methods such as blood tests are invasive, time-consuming, and costly. To address these limitations, our project proposes an intelligent, non-invasive detection system that utilizes deep learning-based image analysis to diagnose specific vitamin deficiencies, including Vitamin A, B-complex (B6, B12), C, and D. High-resolution images of nails, tongue, lips, eyes, and skin are captured using smartphone or camera devices under standardize conditions. An Enhanced Deep Convolutional Neural Network (ED-CNN) is then employed to classify vitamin deficiencies with high accuracy by identifying subtle variations in colour, texture, and structural features. Our model emphasizes specific classification of deficiencies, enabling targeted recommendations.The proposed framework not only enhances diagnostic accuracy but also bridges the gap between detection and healthcare guidance. With global classification accuracy exceeding 90%, this solution is practical for deployment in remote and resource-limited settings. By combining AI-driven diagnosis with preventive health strategies, the system represents a step forward in personalized, accessible, and affordable healthcare innovation.

Published in: 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT)

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Brain Tumor Detection and Classification in Medical Imaging: Comprehensive Survey and Primary Ensemble Model

Publisher: IEEE

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Matam Shashidhar ; T. Harikrishna All Authors

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Abstract:
The classification of brain tumors based on MRI images is crucial in the initial diagnosis and clinical decision process, but the classical deep learning models tend to fail in generalizing features and applying the models to different types of tumors irrespective of their differences. The proposed framework will overcome these challenges by proposing a highly optimized hybrid architecture that is a combination of enhanced feature extraction, deep- representation learning, and fined-tuned decision-making processes to produce high-quality discrimination between various tumor types. The model also uses the power of spatial- context modelling, pathways that are more efficient in terms of convolutionalism and effective learning schemes in order to beat noise, intensity variations and structural complexity of MRI scans. Experimental analysis proves that the suggested system significantly surpasses the state-of-the-art tools like Xception, VGG16, VGG16-XAI, InceptionResNetV2- EfficientNet, and Hybrid CNN-XGBoost models with an outstanding accuracy rate of 99.92.

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Publisher: IEEE

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N. Penchalaiah ; Esub Sayyed All Authors

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Abstract:
The anomalous growth of cells in the brain is called brain tumor, which can be benign or malignant. The malignant tumors are very aggressive and became one of the major causes of death among all ages. Precise identification in early stage recommends effective clinical treatment and enhanced patient survival. Brain tumor is primarily diagnosed by magnetic resonance imaging (MRI). It is a non-invasive medical imaging modality that offers superior contract for tiny soft tissues of the brain. Manual diagnosis is time taking and cause to error prone, inaccurate and high false positive rate. Automatic brain tumor segmentation, identification and classification systems with machine learning (ML) and deep learning (DL) techniques provide second opinion to the radiologists and overcome such problems. Traditional ML techniques such as SVM, KNN, and RF are widely used for brain tumor detection and classification. Most recently, DL approaches like CNN, U-Net and its variants, transformer-based frameworks and hybrid models are used in CAD system for accurate analysis of brain tumor in MRI images. This paper presents a comprehensive review on ML and DL methods that employed brain tumor detection and classification; their emphasized strengths, limitations, and comparative performance analysis. Future research directions to improve accuracy, generalization, and clinical applicability of ML and DL models also discoursed.

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Skin Condition Recognition through Deep Learning: A ResNet50 Implementation

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Keywords: Skin Diseases, Dataset, Image Processing, CNN, ML, DL, Classification, ResNet5.

Abstract: Skin disorders are widespread health problems, and their proper diagnosis and treatment are indispensable. The treatment of them includes several modalities such as local agents, surgery, phototherapy, and systemic drugs. 'Skin Condition Recognition through Deep Learning: A ResNet50 Implementation' highlights the deployment of state-of-the-art artificial intelligence technologies, instead of medical professionals, in the processes of diagnosis and classification of different skin disorders. Through the use of purpose-built skin imaging as well as scanning devices, the system produces clear images of skin lesions that are suitable for analysis. The work is centered on building Convolutional Neural Networks (CNNs) that have already been trained with large databases of labeled skin images to recognize a wide variety of dermatological diseases from the most lethal such as melanoma to more benign conditions like acne. The system is expected to obtain classification accuracy rates from 80% to 85% using the ResNet50 model. This research is a great help in skin diseases classification with the goal of improving diagnosis and therapy formulation.

1 INTRODUCTION

One of the primary issues that most guys deal with is skin illness. Skin illnesses afflict a significant section of the world's population, affecting people of all ages and origins. From minor, transient annoyances to crippling, life-threatening diseases, these disorders range in severity. The great need for improvements in prevention, detection, and management is highlighted by its widespread incidence (R. J. Hay et al., (2014)). With five prevalent conditions fungal infections, pyoderma, scabies, acne, eczema, and warts accounting for over 80% of all occurrences, an estimated 900 million individuals worldwide suffer from skin illnesses at any given time (World Health Organization (2024)). In addition to causing physical suffering and social disgrace, these illnesses significantly increase Disability-Adjusted Life Years (DALYs), a measure of the global cost of disease. Skin disorders have a significant impact on both individual and public health, as evidenced by research by Hay et al., which showed that they contribute 1.79% to the global disease burden.

Geographical areas and socioeconomic categories, however, have very different rates of skin disease prevalence. When access to clean water, medical care, sanitation, and hygiene is restricted or non-existent, these problems are evident. It increases the prevalence of infectious skin illnesses, particularly in developing nations (R. J. Hay et al., (2014)). A person's skin issues might also be influenced by other factors, such as age, lifestyle, etc.

Even though skin illnesses are common, advances in medical research have resulted in the discovery of viable therapies for a number of common conditions. For example, the treatment of bacterial skin infections like pyoderma has been greatly enhanced by topical and systemic antibiotics (Eczema (2024)). Similar to this, topical corticosteroids and immunomodulators have shown promise in treating psoriasis and eczema symptoms (The National Institute of Arthritis and Musculoskeletal and Skin Diseases (2024)). Oral antibiotics, hormone treatments, and topical medicines together can provide substantial relief from acne (National Institute of Allergy and Infectious Diseases [NIAID], 2024) → later: (NIAID, 2024)). Oral medicines and topical antifungals are frequently

Narasapuram, P., Sangaraju, G. S. V., Yerramreddy, H. K. R., Kaditham, S. K. R. and Katika, S. H.
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beneficial in treating fungal infections, another prevalent issue (D. Wang et al., (2023)). Although these developments are noteworthy, there is still a need to find a permanent cure and treatments that work for everyone. The investigation of new therapeutic alternatives, enhanced delivery methods, and the underlying causes of skin diseases continue to be critical areas of study.

Early and accurate diagnosis is really important for successful management of skin diseases. For decades, medical experts mostly relied on the power of their own eyes. However, this method can be subjective and error-prone, especially with regards to complex or rare ailments (P. Mekala et.al, (2023)).

The current standard processes are also incredibly expensive and complex. Technological advancements have enabled many advanced methods for skin disease detection. These techniques help doctors make more informed treatment choices and provide useful tools to improve diagnostic accuracy.

A revolution is taking place in the speciality of dermatology enabled by the recent evolution of deep learning, a branch of artificial intelligence. Deep learning algorithms can be trained on different datasets of labelled images to discover correlations and patterns that are even more difficult for the human eye to perceive. These models showed promising results in the classification of various skin conditions such as melanoma, eczema and psoriasis (J. Ker et.al, (2017), L. Yu et.al (2017)). Yu et al. conducted research which shows that and Nasr-Esfahani et al. Deep learning has great promises in this domain as similar research has achieved greater than 90% accuracy in identifying benign and malignant tumours (A. Esteva et al (2017)). Despite these extraordinary advances, there are challenges. Successful and responsible use of deep learning in dermatology will demand careful attention to ethical issues surrounding data biases, incorporation into existing healthcare workflows, and the need for continuous learning and adaptation (K. M. Hosny et.al, (2019)).

This paper evaluates the use of the ResNet50 deep learning model to classify skin diseases on the DermNet dataset for skin disease. We train the well-known ResNet50 architecture to classify each of the skin conditions from the photos. It looks at how well the model performs in diagnosing skin conditions based on images of patients, as well as its reliability. Attuning to research processes can lead to benefits in research processes and contribute to building processes into useful tools for doctors and other professionals.

2 LITERATURE SURVEY

Several deep learning architectures have been studied for clinical diagnosis of skin lesions. According to Sapra et al, EfficientNet-B0 achieved a very excellent accuracy of 92.3% which maintains computational efficiency with respect to the state of art designs on thermoscope images. (A. Esteva et al., (2017)).

Moreover, M. Dash et al (2019). explored how capsule networks could be employed, demonstrating the power of capturing spatial interdependencies within skin lesions with an accuracy of 88.7%.

These findings highlight the importance of further exploring different architectures and their varying accuracy levels, underlining just how important it is to select the right design for the job at hand.

Classification answers the question of whether a disease is present, but correct lesion segmentation as well as early discovery are factors for enhancing patient's outcome (H. Nahata et.al, (2020)). In Yu et al., a deep-learning model for skin cancer detection and for separation of malignant area from the surrounding image is proposed. This model provides outstanding segmentation accuracy and useful information for treatment planning and further diagnosis.

In the year 2023, similarly, Xie et al. done research on the application of deep learning methods for the early recognition of melanoma and found that it could have a promising accuracy rate of 87.5% when identifying worrying malignant cells. P. Lambin et al., (2012). These advancements show that deep learning has a long way to go in terms of aiding in early detection and segmentation if they're able to enhance quality and treatment outcomes.

Deep leaning based skin disease detection suffers considerably due to lack of data. The first and most critical problem with publicly available datasets, in order to train the algorithms, is that not enough data on skin lesions is widely shared. (P. Yao et al). These include limited papers in size, disproportionate overrepresentation of specific diseases, or inadequate variability in disease severity or demographics. These restrictive conditions can affect the model's performance as predictions can be subjective. Research has suggested transfer learning strategies (e.g. Wang et al. to solve these issues. Using the knowledge gained totrain the models on larger datasets enabled them to achieve 89.2% accuracy on a more topic-specific dataset. This means transfer learning is a good strategy for the case of data limitations. In (D. A. Okuboyejo et.al (2018)). By

IoT Enhanced Smart Plant Care System for Automated Leaf Detection and Health Diagnosis

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Keywords: Transfer Learning, IoT, Plant Disease Detection, Deep Learning, Precision Agriculture, Real-Time Monitoring.

Abstract: A smart plant care system was created using transfer learning in an Internet of Things (IoT) enabled expert framework for automatic plant leaf identification and health monitoring. Using similar principles to the research described in the above sections, this technique employs a small dataset of IoT sensor images of plant leaves to correctly adapt a pre-trained deep learning model to a task of detection & diagnosis of plants illnesses. This transfer learning technique ensures accurate identification of plant disease while reducing the time required for training and computing cost. Using live photographs of the leaves of plants to diagnose plant diseases in real-time, this works well in real-time plant treatment, recovering diseases for plants, and predicting plants. Utilizing transfer learning for rapid adaptation to new plant species and disease patterns makes the model efficient and scalable. The experimental analysis demonstrates that the system can identify the diseased leaves with 94% accuracy. This innovative technique aids farmers in optimizing crop health, minimizing pesticide use, and maximizing overall yield through the implementation of data-driven decision-making. By incorporating transfer learning into IoT, this method supplies a sustainable solution for precise agriculture that contributes to solving the worldwide challenges of food security and environmental sustainability.

1 INTRODUCTION

The internet of things (IoT) and artificial intelligence (AI) are two rapidly advancing technologies that are revolutionising various industries, including agriculture. These technologies are driving an innovative future for intelligent systems and creating opportunities to facilitate significantly greater sustainable and efficient farming. From this perspective, health maintenance of plants is the critical basis of ecosystem equilibrium and food security Baheti, H., et al. (2023), Shin, J., et al. (2023), Poyatos, J., et al. (2023).

Early detection and timely treatment of plant diseases are vital for protecting plant health and safeguarding agricultural yields. Traditional plant disease detection techniques frequently depend on visual signals and manual inspection when the disease symptoms are mild, which can be labour-intensive, time-consuming, and subject to human error Baheti, H., et al. (2023. In this respect, the combination of AI and IoT provides a breakthrough solution Khalil, R.A., et al. (2021).

Internet of Things sensors can be used to gather real time data on a variety of environmental conditions and plant health indices. Such data is then fed as input to machine learning models Poyatos, J., et al. (2023). Transfer Learning (TL) is one of the best methods available for analyzing this data Too, E.C., et al. (2019), Ghosal, S., & Sarkar, K. (2020), Garg, G., et al. (2021). TL makes it feasible to repurpose these pre-trained architectures to modify them and quickly generalize on new tasks with little labelled data. This approach is especially useful in plant disease detection since it greatly reduces the time and computational cost required to train a fresh model from scratch. In the context of plant disease identification, TL can be particularly useful for model training because it allows models to learn features from images of plant leaves that may not be immediately apparent from visual inspection alone Baheti, H., et al. (2023). These were fine-tuned using TL on the new dataset to identify complex patterns and textures on leaf images to classifying into diseased and healthy leaf with high accuracy using a smaller dataset.

This merging of IoT and machine learning results in the introduction of Smart Plant Care systems that offer benefits above traditional disease detection methods Rangarajan, A., & Raja, P. (2020). These include:Early Warning. By detecting diseases at an early stage, agricultural losses are minimized and interventions to protect crops can be taken quickly.
Resource Optimization. Judicious use of resources data insights guides precise allocation of resource use, be it water, fertilizer or pesticides such that plants get only what they need Garg, G., et al. (2021).

Remote Monitoring. This enables large-scale farms to operate efficiently and reduce risk in real-time as farmers can monitor crops remotely from anywhere in the world Too, E.C., et al. (2019), Ghosal, S., & Sarkar, K. (2020), Garg, G., et al. (2021), Ouhami, M., et al. (2021). The potential of Smart Plant Care is huge. This technology can result in:(either by enhancing disease detection and management;

Increased Crop Yields. Farmers are able to increase their food supply by preventing losses through disease, thereby addressing the rising global demand. Reduction in Food Waste. Reducing spoilage helps mitigate waste, and disease detection can help do just that. Environmental Protection. Sustainable agriculture practices reduce the overuse of pesticides and fertilizers, minimizing the environmental impact of farming. A Steady and Reliable Food Supply. Disease-resistant and healthy crops are key for long-term food security and for future generations Ouhami, M., et al. (2021).

Moreover, Smart Plant Care can contribute to critical global issues like food security and biodiversity conservation Baheti, H., et al. (2023). It encompasses methods to reduce the impacts of climate change on farming Ghosal, S., & Sarkar, K. (2020). Not only does early detection of disease assist in curbing the spread of these infections, which can endanger grand ecosystems and the biodiversity within them Baheti, H., et al. (2023), but it can also provide unique insight into how these diseases spread and provide preventative measures before major outbreaks Khalil, R.A., et al. (2021). In biodiversity hotspots, in which the loss of a single plant species could have a cascading effect throughout the ecosystem, the early detection and management of plant diseases is vital Rangarajan, A., & Raja, P. (2020).

2 LITERATURE SURVEY

Traditional approaches for plant disease detection often face challenges Khalil, R.A., et al. (2021), Rangarajan, A., & Raja, P. (2020), Too, E.C., et al. (2019), owing to their dependence on manual inspection and the delicate nature of early disease symptoms. But the potential benefits of early detection are significant, both to improving crop yields and reducing the reliance on pesticides. Recent advances in Transfer Learning (TL), IoT, and image processing can now allow for the automation of plant disease diagnosis.
With Transfer Learning, we leverage well-trained (and optimized) models like ResNet and InceptionV3, which have been validated against certain datasets to enhance accuracy and reduce the dependency on large datasets. This is especially true for applications in agriculture, where data access is often limited Baheti, H., et al. (2023).

Various recent investigations demonstrated that TL-based models can improve the quality, with reliability of classifying the plant disorders highly, and increase the ability of workings, even with fewer datasets. Models such as ResNet-50 and Inception V3 Baheti, H., et al. (2023), Shin, J., et al. (2023), Poyatos, J., et al. (2023), Khalil, R.A., et al. (2021), Rangarajan, A., & Raja, P. (2020) can now accurately identify plant diseases. Because they can learn intricate features and patterns from a small number of labelled plant leaf images, these models are critical for applications in agriculture where large datasets are difficult to generate Samie, F., et al. (2019). Integration of IoT sensors enables continuous real-time monitoring of environmental parameters and plant health, resulting in insights that TL models can analyse Shamsul Kamar, N.A., et al. (2023), Oppenheim, D., et al. (2019), Zhang, K., et al. (2018), Morais, R., et al. (2019), Zhu, N., et al. (2018). Based on IoT-based technologies, real time monitoring of crop health may assist with early diagnosis of diseases and immediate respond to these diseases Zhang, K., et al. (2018). By facilitating farmers' allocation of resources such as fertilizer or water based on real-time data as efficiently and effectively as possible, this connection promotes precision agriculture and reduces resource waste. Early-stage plant diseases that often are imperceptible to the human eye.

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An Experimental Evaluation of Resilience and Scalability in Hybrid Quantum AI Architectures

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***Abstract*- Complex computational problems may be solved by combining quantum computing and artificial intelligence (AI); however, current hybrid quantum AI architectures are limited by issues with scalability, noise, and qubit scarcity. In contrast to classical models like Deep Neural Networks (DNNs) and Support Vector Machines (SVMs), this paper proposes an experimental method to evaluate the resilience of hybrid models: Quantum Neural Networks (QNNs), Variational Quantum Circuits (VQCs), and Hybrid Quantum-Classical Machine Learning (HQML) implemented on IBM Qiskit, Google Cirq, and Rigetti Forest. Using 200 experimental trials, the study assessed the computational efficiency, scalability, and fault tolerance of small (MNIST subset), medium (CIFAR-10 subset), and large synthetic datasets under simulated conditions of limited computability and fault injections. The results show that while HQML is more flexible and robust in noisy and large-scale scenarios, classical models are still quicker and more resource-efficient. The substantial variations in scalability and robustness are demonstrated by statistical validation, highlighting the hybrid quantum AI's potential to develop into actual, workable, fault-tolerant systems.**

Keywords-Hybrid Quantum AI, Quantum Neural Networks, Variational Quantum Circuits, Scalability, Fault Tolerance.

I. INTRODUCTION

One of the most significant technological frontiers of the twenty-first century is the intersection of artificial intelligence (AI) and quantum computing [1]. Quantum computing will prove to be a breakthrough and limit the classical architectures by allowing exponential computational speeds on certain classes of problems, even though artificial intelligence (AI) continues to transform industries due to the high level of data processing and decision making [2]. When combined, the technologies have the power to completely transform industries like massive data processing, secure communications, drug discovery, and optimization [3]. However, realizing this potential is not simple. Quantum systems still have hardware constraints, and AI models need to be more computationally powerful and scalable. In this regard, hybrid quantum AI systems—that is, systems that combine quantum and classical resources—have emerged as a promising middle ground. To evaluate those frameworks' practicality and long-term impacts, it is essential to comprehend how they perform under computational and scalability limitations [4].

A. Background and Significance

Recent advancements in artificial intelligence (AI) and quantum computing have opened up new avenues for resolving challenging computational issues that are beyond the capabilities of current classical systems [5]. By utilising the quirks of quantum mechanics, such as superposition and entanglement, quantum artificial intelligence (AI) holds the potential to accelerate machine learning and optimize, categories, and identify patterns while using fewer resources [6]. However, despite these guarantees, quantum hardware is still in its infancy, with issues with scalability, high noise, error rates, and an inadequate number of qubits [7]. The practical application of quantum benefits at the expense of existing hardware has thus been successfully addressed by hybrid quantum AI systems, which combine classical and quantum models of computation [8].

B. The Need for Evaluating Resilience

The key factor influencing these hybrid frameworks' practicality in the real world is their ability to withstand performance and adjust to computational and scaling constraints [9]. High computational costs already plague even traditional AI applications, especially in fields like massive data analytics, natural language processing, and deep learning [10]. This complexity is further increased when quantum components are added to such workflows because algorithms must be redesigned to operate on finite quantum resources and noisy intermediate-scale quantum (NISQ) machines. In order to ascertain not only the hybrid quantum AI systems' performance but also their sustainability and scalability, it is necessary to assess their resilience.

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Road and Pothole Segmentation Using an Attention-Based Coupled Framework

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Abstract

We present a unique linked attention-based paradigm for road and pothole segmentation. Many developing countries, as well as rural areas, lack well-defined and well-maintained drivable areas. In such cases, an advance driver assistance system (ADAS) is required to assess the drivable area and warn of impending potholes to ensure vehicle safety. The goal of this research is to create a standard for pothole classification to help support a decision-making system for pothole repair. In this study, we first examine the existing criteria. Following that, we gather photographs of potholes via video recording on a moving vehicle, propose a pothole categorization guideline, and then apply the guideline to the obtained images and pothole 2D DB. Using three types of training data, we compare GAL-DeepLabv3+, our best-performing implementation, to SoTA CNN using RGB images, disparity images, and modified disparity images. Furthermore, these data can be used in structured systems to analyze and maintain road health. We show how a few-shot learning strategy can improve accuracy even with fewer training data. We present comprehensive experimental results for road segmentation using the KITTI and Indian driving set (IDD) datasets. On IDD, we also present pothole segmentation. © 2026 by Apple Academic Press, Inc. All rights reserved.

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ADAS; Attention-based coupled framework; GAL-DeepLabv3+; IDD; KITTI; Road and pothole segmentation

Indexed keywords

Engineering controlled terms

Behavioral research; Decision making; Developing countries; Image recording; Image segmentation; Learning systems; Roads and streets; Safety engineering

Engineering uncontrolled terms

Advance driver assistance system; Attention-based coupled framework; Disparity images; Driver-assistance systems; GAL-deeplabv3+; Indian driving set; KITTI; Road and pothole segmentation; Training data; Vehicle safety

Engineering main heading

Automobile drivers; Video recording

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Abstract

Author keywords

AN END-TO-END HYBRID SPATIOTEMPORAL DEEP LEARNING FRAMEWORK FOR REAL-TIME SIGN LANGUAGE TO SPEECH TRANSLATION

Abstract

Language constitutes the fundamental basis of human interaction, enabling individuals to articulate ideas, emotions, and intentions effectively. For a substantial population of deaf and hard-of-hearing individuals worldwide, sign language represents the primary and most natural mode of communication. Despite being linguistically rich and structurally complete, sign languages are not universally comprehended beyond their native communities. This lack of mutual intelligibility creates persistent communication barriers across critical domains such as education, healthcare, employment, and everyday social engagement, thereby constraining inclusivity and societal participation. Recent breakthroughs in deep learning, computer vision, and speech processing technologies have introduced promising avenues for mitigating these challenges by facilitating the automatic translation of sign language gestures into intelligible spoken language.

This paper presents a comprehensive investigation into the design and implementation of an automated sign language–to–speech translation framework leveraging state-of-the-art machine learning methodologies. The proposed system is structured around a hybrid spatiotemporal architecture that integrates advanced sequence modeling paradigms, including Gated Recurrent Units (GRUs), Transformer-based attention mechanisms, and Graph Neural Networks (GNNs). MediaPipe Holistic is employed to extract high-fidelity skeletal and landmark representations from video inputs, while deep neural classifiers perform robust gesture recognition. The recognized sign sequences are subsequently converted into natural speech output using Google Text-to-Speech (gTTS), enabling real-time auditory feedback.

Extensive experimental validation is conducted on widely recognized benchmark datasets, namely Word-Level American Sign Language (WLASL), AUTSL (Turkish Sign Language), and RWTH-PHOENIX-Weather 2014T (German Sign Language). Empirical results indicate that conventional CNN–RNN architectures, though effective for limited vocabularies, exhibit diminished scalability when applied to large-scale and signer-independent recognition tasks. In contrast, Transformer-based and pose-driven Temporal Graph Convolutional Network (Pose-TGCN) models demonstrate superior performance, achieving accuracy levels ranging from 92% to 96% on large datasets. Notably, the baseline GRU model attains an accuracy of 95% on a constrained 15-word subset of WLASL, whereas advanced architectures maintain robust performance across significantly expanded vocabularies.

Beyond system development, this study offers a critical comparative analysis of classical and contemporary deep learning approaches for sign language recognition and speech generation. Practical deployment considerations are examined, including signer variability, continuous sign recognition, computational efficiency, and the generation of speech with natural prosody. Furthermore, the paper outlines prospective research directions encompassing multimodal data fusion (RGB, depth, and wearable sensor inputs), real-time mobile and edge deployment, multilingual sign language support, and emotion-aware speech synthesis to enhance communicative expressiveness.

Keywords: Sign Language Recognition, Deep Learning, Transformer Networks, Gated Recurrent Units, Graph Neural Networks, Speech Synthesis, MediaPipe Holistic, Multimodal Learning

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Chapter 4: AN END-TO-END HYBRID SPATIOTEMPORAL DEEP LEARNING FRAMEWORK FOR REAL-TIME SIGN LANGUAGE TO SPEECH TRANSLATION

I. INTRODUCTION

1. Background and Motivation

Communication barriers between hearing and deaf or hard-of-hearing individuals continue to limit social inclusion. According to the WHO, over 430 million people globally experience disabling hearing loss, a number expected to exceed 700 million by 2050. Sign language serves as the primary communication medium for this population and possesses its own grammatical and linguistic structure.

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AI-BASED DRIVER DROWSINESS MONITORING SYSTEM FOR ROAD SAFETY

Abstract

Driver fatigue is one of the most critical yet preventable contributors to severe road accidents worldwide, with micro-sleep episodes often occurring without warning and resulting in catastrophic outcomes. Traditional geometric and threshold-dependent approaches—such as the Eye Aspect Ratio (EAR)—remain popular due to their simplicity but lack robustness when exposed to real-world complexities such as nighttime driving, occlusions from eyewear or masks, and variations in driver physiology. To overcome these limitations, this paper proposes an advanced multimodal driver drowsiness detection architecture that leverages RGB–infrared (IR) fused vision, inertial measurement unit (IMU)–based head-motion analysis, and a hybrid CNN–Transformer temporal learning pipeline[1]. The system achieves high resilience to environmental variations, enabling accurate detection of blink patterns, prolonged eyelid closures, yawning cues, and micro-sleeps under both controlled and naturalistic conditions. A key innovation of this framework is its adaptive Bayesian personalization module, which continuously adjusts drowsiness thresholds based on each driver's unique blink characteristics and physiological behavior. This substantially reduces false alarms—one of the primary limitations of existing commercial Driver Monitoring Systems (DMS). Additionally, cross-modal attention mechanisms dynamically prioritize the most reliable sensor inputs during challenging conditions, such as extreme glare, low-light scenarios, or partial occlusions. To ensure practical deployment in real vehicles, the model undergoes aggressive embedded optimization, including 8-bit quantization, structured pruning, and knowledge distillation, achieving inference latencies below 60 ms on low-cost automotive-grade hardware while maintaining high predictive performance[2]. The system is extensively validated through a large-scale experimental protocol involving 200 participants, covering a wide demographic range and diverse real-world driving conditions. Results demonstrate an F1-score of 0.92, over 35% reduction in false alarms compared to baseline methods, and significantly improved detection reliability during nighttime operation.

Ethical considerations such as privacy preservation, on-device processing, and compliance with emerging automotive AI regulations (e.g., GDPR, ISO 26262, UNECE WP.29) are integrated throughout system design, ensuring responsible and trustworthy deployment. The proposed framework not only advances the state-of-the-art in driver fatigue detection but also provides a scalable, secure, and cost-efficient solution suitable for next-generation intelligent transportation systems.

Keyword: Driver Drowsiness Detection, Multimodal Deep Learning, RGB–IR Fusion, IMU-Based Motion Analysis, CNN–Transformer Hybrid Model, Temporal Modeling, Bayesian Personalization, Micro-Sleep Detection, Cross-Modal Attention, Embedded AI Optimization, Quantization-Aware Deployment.

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Chapter 3: AI-BASED DRIVER DROWSINESS MONITORING SYSTEM FOR ROAD SAFETY

I. INTRODUCTION

Driver state monitoring has become increasingly important with the rise of semi-autonomous vehicles, where the human driver is still required to remain attentive and capable of taking control at any moment. As automation levels increase, situational awareness tends to decrease, leading to higher dependency on accurate and timely drowsiness detection systems. Numerous studies indicate that even a slight reduction in vigilance can impair hazard perception, lane-keeping accuracy, and braking response times, ultimately increasing collision risk. In addition, the growing prevalence of long-distance transportation, night-shift driving, and commercial fleet operations has highlighted the critical need for scalable, reliable, and low-maintenance monitoring solutions. Commercial drivers, in particular, face irregular sleep schedules, extended duty periods, and increased cognitive workload, all of which elevate the likelihood of fatigue-induced incidents[3]. These challenges underscore the necessity for intelligent systems that can generalize across diverse real-world scenarios while maintaining high sensitivity and low false-alarm rates.

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SMART WILDFIRE DETECTION USING IOT AND MACHINE LEARNING

Abstract

Wildfires are becoming a serious hazard to the environment, endangering infrastructure and human lives while generating extensive ecological harm. Conventional fire detection techniques frequently have high operating costs, limited coverage, and delayed alarms. This research suggests a Next-Generation IoT–Machine Learning Integrated Wildfire Detection and Rapid Response System that is intended for early wildfire detection and real-time environmental monitoring[1] in order to address these issues. In order to continuously gather information about temperature, humidity, smoke levels, and flame characteristics, the system uses a network of Internet of Things sensors. These sensor readings are sent to a cloud-based platform, where they are analyzed by a machine learning model to find anomalous patterns that might be signs of impending fire breakouts. In order to facilitate prompt decision-making and quick emergency response, the system immediately notifies authorities via SMS, email, and mobile application alerts upon detection. When compared to conventional threshold-based techniques, experimental results show that the ML-enhanced prediction model greatly increases detection accuracy and decreases false alarms. Strong potential for scalable, affordable, and dependable [2]wildfire monitoring is demonstrated by this integrated solution, which will help with more intelligent disaster management and environmental protection.

Keywords: IoT, Machine Learning (ML), Wildfire Detection, Environmental Monitoring, Early Warning Systems, Real-Time Monitoring, Cloud Computing, Rapid Response, Smart Disaster Management, Predictive Analytics.

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Chapter 2: SMART WILDFIRE DETECTION USING IOT AND MACHINE LEARNING

I. INTRODUCTION

One of the most damaging natural disasters, wildfires pose a serious threat to human safety, cause substantial ecological damage, and cause financial losses. The frequency and severity of wildfires have significantly increased in recent years due to rising global temperatures and shifting meteorological conditions. Conventional fire detection techniques, including camera-based surveillance, satellite imaging, and human patrolling, frequently have significant operating overhead, restricted coverage, and delayed detection. These drawbacks underscore the pressing need for scalable, intelligent, and automated wildfire monitoring systems.Continuous environmental monitoring through inexpensive, energy-efficient sensor networks has been made possible by the Internet of Things' (IoT) quick development.

IoT devices may gather a wide range of data, including temperature, humidity, gas emissions, and smoke concentration, which can be used to identify anomalies early. But depending only on threshold-based sensing frequently leads to low predictive power and false warnings.Machine Learning (ML) approaches have become effective tools for early fire prediction and pattern recognition in order to address these issues. ML models can improve accuracy and response time by identifying tiny fluctuations in multi-sensor data that might indicate early-stage wildfire[3] conditions before flames are apparent. The Next-Generation IoT–ML Integrated Wildfire Detection and Rapid Response System presented in this paper integrates intelligent ML-driven decision-making with real-time sensor monitoring. Through dispersed IoT nodes, the suggested system continuously gathers environmental data, which it then sends to a cloud platform for categorization and prediction using an ML model.

The technology automatically sends out rapid alerts via SMS, email, and mobile notifications to pertinent stakeholders when abnormal patterns suggest a possible fire[4]. Developing a scalable, economical, and dependable wildfire detection system that can lower detection latency and improve readiness for disasters is the goal of this project. In comparison to conventional methods, the suggested method shows increased detection accuracy and quicker reaction times, providing a viable option for smart forest management[5] and next-generation environmental protection.

II. RELATED WORK

Research on wildfire detection has been ongoing for a number of decades, with a growing focus on integrated communication frameworks, intelligent prediction models, and sensor networks. Traditionally, fire lookout towers, satellite-based remote sensing, and human patrolling have been the mainstays of early detection systems. Although satellite imaging can cover large areas, it is less useful in situations requiring quick responses due to issues including cloud interference, low temporal resolution, and delayed re-visit periods. In order to get around these limitations, scientists started looking into real-time, ground-based sensor techniques.

1. Wireless Sensor Networks for Fire Detection

Wireless Sensor Networks (WSN) were among the first technical strategies. Several studies have shown that networks of inexpensive sensor nodes are capable of continuously monitoring environmental parameters like CO levels, temperature, relative humidity, and smoke density. These systems' capacity to record local conditions in real time demonstrated a great deal of promise for early detection. Nevertheless, [6]WSN-based solutions frequently

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URBANPARK: INTELLIGENT PARKING ALLOCATION WITH ANPR

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Abstract

In urban areas, parking has become a significant problem due to inadequate infrastructure, poor space management, and the dramatic rise in the number of cars. The manual monitoring used by traditional parking systems frequently leads to traffic jams [1] . needless fuel waste, and irritated drivers. The urgent need for clever solutions is highlighted by recent research that suggest that cars looking for parking spaces account for approximately 30% of urban traffic.

This problem is addressed by ParkEase, an Internet of Things (IoT)-powered smart parking and navigation system that uses NodeMCU ESP8266 microcontrollers in conjunction with ultrasonic sensors to instantly determine spot availability. The Firebase cloud server receives the occupancy data on a regular basis, allowing for smooth synchronization between online and mobile platforms. The Google Maps API and a Flutter-developed mobile application help users find parking spaces in their area, offer the best routes for navigation, and make scheduling easier. User convenience is further improved by extra features including voice-activated search, push alerts, dynamic charge calculation, and reminders when reservations expire. Administrators may increase efficiency at scale by managing pricing rules, keeping an eye on slot utilization, and analyzing parking statistics with a dashboard built with React.js.More than 95% slot identification accuracy and successful real-time synchronization between client apps, cloud, and hardware were demonstrated by the prototype implementation using toy automobiles and demo parking spaces. Additionally, the method helps to promote environmentally friendly urban mobility, conserve fuel, and lessen traffic congestion [2]. ParkEase demonstrates the possibility of combining IoT, cloud computing, and mobile technologies to address significant infrastructure issues beyond parking management [3].

This study emphasizes ParkEase's design, methodology, execution, outcomes, and scalability while highlighting the applicability of the system to sustainable mobility networks and smart cities. Future additions to the system could include blockchain-based safe payments, AI-driven slot detection through computer vision, and interaction with electric vehicle charging stations, completing ParkEase as a comprehensive platform for managing urban mobility in the next generation.

Keywords: IoT, Smart Parking, Ultrasonic Sensors, NodeMCU ESP8266, Firebase, Google Maps API, Mobile Application, Voice Assistant, Smart Cities

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I. INTRODUCTION

Rapid urbanization and improving living standards have caused a sharp rise in the number of cars on the road, which has resulted in serious parking issues in cities. According to studies, it takes vehicles an average of fifteen to thirty minutes to find a parking spot. This not only irritates commuters but also greatly increases traffic congestion, fuel waste, and pollution in the environment. Studies have revealed that around 30% of metropolitan traffic is made up of cars looking for parking, highlighting how serious the issue is.
Conventional parking systems are frequently ineffective, unreliable, and unable to provide real-time availability information since they mostly rely on human attendants, ticketing, or a small number of sensor-based processes. Furthermore, these technologies are incompatible with booking platforms and navigation tools, which makes them inappropriate for smart city infrastructure.

Smart parking systems can offer real-time spot identification, instant updates, and enhanced user comfort by utilizing developments in cloud computing, mobile application development, and the Internet of Things (IoT). Low-cost sensors and cloud databases are used by IoT-enabled solutions to track parking availability and synchronize data amongst devices. However, a large number of current smart parking prototypes are only suitable for small-scale installations, do not integrate with navigation, or do not include features like dynamic pricing, voice help, or notifications.With the help of Firebase cloud storage, NodeMCU ESP8266 microcontrollers, mobile/web apps, and ultrasonic sensors, this paper presents ParkEase, a complete Internet of Things-powered smart parking and navigation system. In addition to real-time slot occupancy detection and updating, ParkEase allows users to book spots, compute fees, and receive reservation reminders . It also offers optimum navigation routes using the Google Maps API. A React.js-based web dashboard that makes monitoring, analytics, and pricing administration easier is another advantage for admins.

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Alkali-controlled γ-Al_2O_3 nanostructures with high dielectric constant

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Abstract

Nanostructured γ-Al_2O_3 was made from boehmite using a soft-chemical process. This process utilized alkali-controlled co-precipitation combined with microwave heating at 600 °C to achieve crystallization. The study looked into how different alkali types—NaOH, KOH, and LiOH·H_2O affected phase changes, microstructure, surface chemistry, optical response, and dielectric properties. XRD and FTIR confirmed that the NaOH-derived sample was phase-pure γ-Al_2O_3. In contrast, KOH and LiOH·H_2O showed secondary aluminate phases and lattice distortion. Raman analysis detected clear tetrahedral and octahedral Al–O modes in the NaOH sample, whereas the others exhibited broader features, indicating greater disorder. TEM images revealed uniform nanocrystalline grains in the NaOH-derived γ-Al_2O_3, unlike the agglomeration and defects seen in the other samples. XPS results indicate that the dominant bond is Al^{3+}–O^{2-}, with some minor surface species. Dielectric measurements from 0.01 Hz to 1 MHz showed stable permittivity and low loss for the NaOH-derived γ-Al_2O_3, making it suitable for radio-frequency insulating applications.

Keywords

Alkali-controlled synthesis; γ-Al_2O_3; Boehmite; Dielectric ceramics; Microwave heating; Impedance spectroscopy

Introduction

The rapid advancement of communication technologies has made fifth / sixth-generation (5G/6G) systems central to future digital infrastructure. Emerging applications such as the industrial internet of things, smart manufacturing, autonomous systems, and immersive technologies demand extremely high data rates, low latency, and reliable signal transmission. According to the International Telecommunication Union, 6G networks are expected to achieve peak data rates approaching 1 Tbps by 2030, creating a strong need for materials capable of operating efficiently at high frequencies [[1], [2], [3]]. In radio-frequency (RF) communication systems, dielectric materials play a critical role as insulating substrates and components in antennas and electronic modules. These materials must exhibit low dielectric loss, stable permittivity, high electrical resistivity, and

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Dr. N. Ramesh
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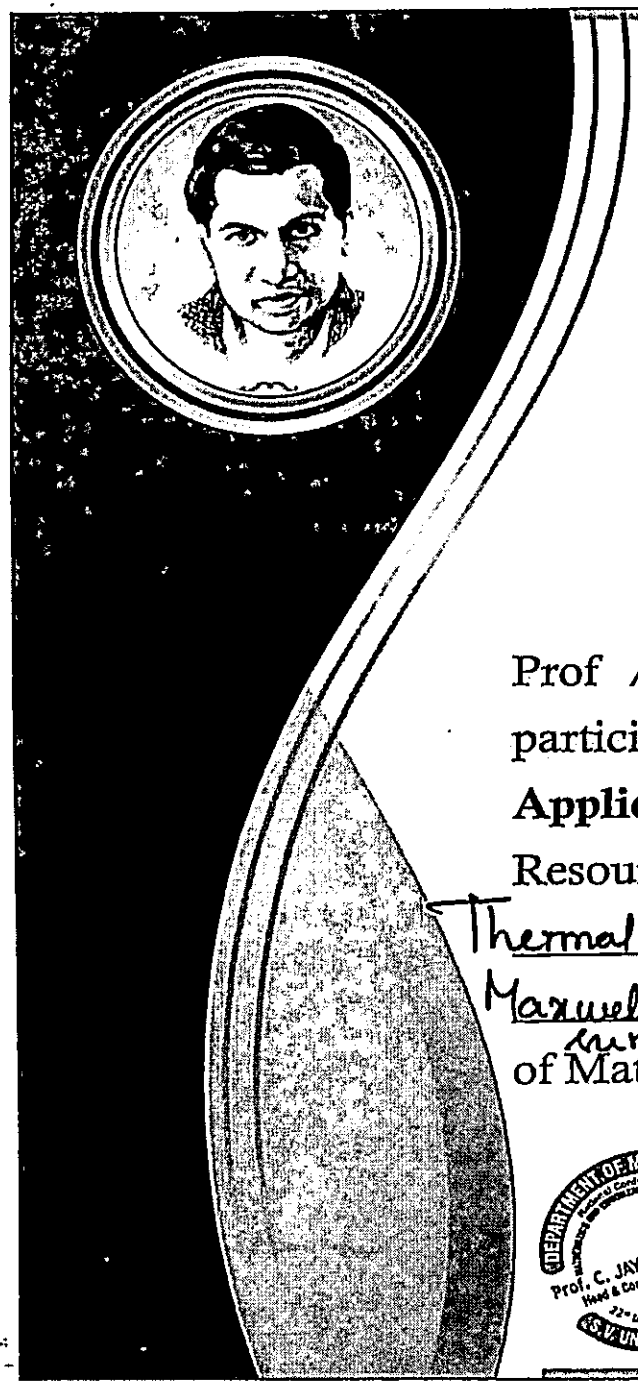

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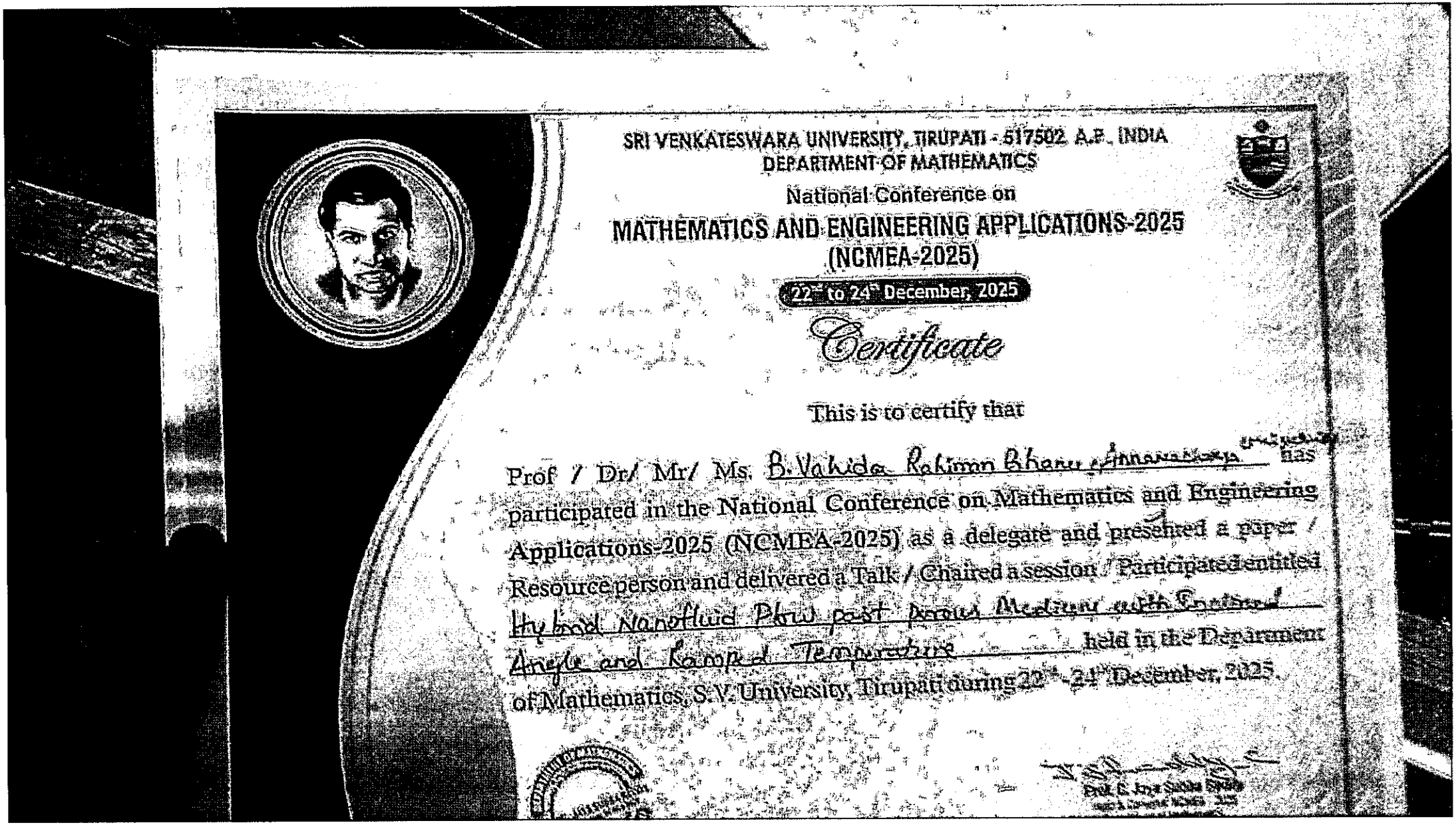

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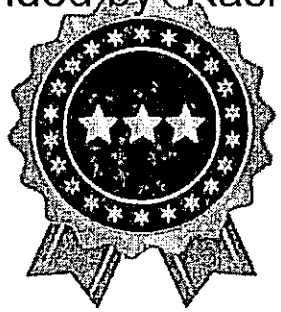

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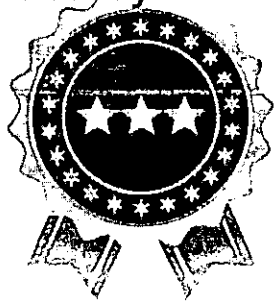

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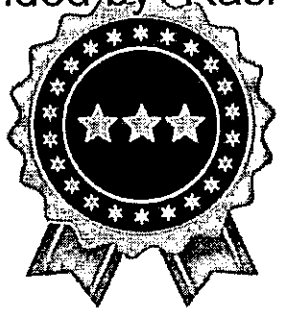

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organized by the Department of Computer Science and Engineering, Akal University, Talwandi Sabo, Bathinda (Punjab), during 3rd- 5th April, 2026.

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Handbook of Nanofillers

I. Pugazhenthi, S. Mohammed Safiullah & K. Anver Basha

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Abstract

Nowadays, nanofillers are used to improve the numerous properties of the polymer. Incorporation of nanofiller in polymers often lead to boost the properties of resultant materials. Several researchers have devoted great attention to the surface modification of nanofillers by chemical or physical interaction. The nanofillers' surface was stabilized by covalent attachment of polymer ligands. Some literature evidenced that the agglomeration of nanofiller can also be minimized by strengthening the interaction between the nanofillers with the polymer matrix, which leads to the formation of polymer nanocomposites. It is reported that the combination of well-dispersed and surface-treated nanofillers would yield excellent opportunities to engineer the thermal behavior of a wide range of nanocomposites. Several polymers have been utilized to develop polymer

English Language Teaching: The Role of Connected Learning Initiative In Bridging Educational Gaps Through Digital Innovation

Mr.Billa Jaheer,
Assistant Professor of English,
Annamacharya University, Rajampet.

Abstract:

This study examines the role of the Connected Learning Initiative (CLIx) in transforming English Language Teaching (ELT) through digital innovation, particularly in underserved regions of India. The research explores the following question: How does CLIx contribute to bridging educational gaps in ELT through ICT-enabled Open Educational Resources (OER)? The primary aim of this study is to evaluate the effectiveness of CLIx in enhancing student learning outcomes and teacher professional development through interactive, technology-enabled pedagogies. The objectives include analysing the impact of blended learning and constructivist methodologies on English language acquisition, assessing CLIx interventions' scalability, and understanding the collaborative networks' role in sustaining digital education initiatives.

This research adopts a qualitative methodology, incorporating a detailed analysis of CLIx reports and secondary sources about the CLIx implementations in government schools across Chhattisgarh, Mizoram, Rajasthan, and Telangana. Data collection methods include document analysis of curriculum materials and policy reports. The study also engages with secondary sources, including reports from the Tata Institute of Social Sciences (TISS). The findings indicate that CLIx successfully integrates digital tools with pedagogical frameworks to foster communicative competence in English, critical thinking, and 21st-century skills.

The initiative's emphasis on multilingual delivery and constructivist approaches enhances accessibility and engagement, particularly for students from marginalised communities. The research highlights the effectiveness of teacher training programs in equipping educators with digital competencies, thereby promoting sustainable pedagogical innovation. Leveraging ICT-enabled resources, CLIx serves as a scalable model for equitable and technology-driven ELT interventions in developing educational contexts.

Keywords: Connected Learning Initiative, English Language Teaching, Digital Innovation, ICT in Education, Teacher Professional Development.

Introduction:

Integrating digital technologies in education has emerged as a transformative force in addressing persistent disparities in learning outcomes, particularly in English Language Teaching (ELT). Despite global advancements in educational technology, marginalized communities in developing nations continue to face significant barriers, including limited access to quality instruction, inadequate teacher training, and insufficient digital infrastructure. In India, where linguistic diversity and socioeconomic inequalities further complicate educational delivery, innovative solutions are imperative to bridge these gaps. The Connected Learning Initiative (CLIx), a collaborative venture between the Tata Trusts, the Tata Institute of Social Sciences (TISS), and the Massachusetts Institute of Technology (MIT), represents a pioneering effort to leverage digital innovation for equitable ELT. This study investigates CLIx's role in revolutionising English language education through ICT-enabled Open Educational Resources (OER), examining its impact on learners and educators in underserved regions.

The imperative for this research stems from the urgent need to evaluate scalable, technology-driven interventions that can enhance ELT in resource-constrained settings. While existing literature highlights the potential of digital tools in language education, there remains a paucity of empirical studies on large-scale initiatives that combine pedagogical innovation with systemic collaboration. CLIx's unique model—integrating constructivist methodologies, multilingual resources, and teacher professional development—offers a compelling case study for assessing how digital innovation can democratise access to quality ELT.

This insightful article, "The CLIx Open Story Tool: Reflections on Design" by Anusha Ramanathan, Louisa Rosenheck and Nishevita Jayendran, examines CLIx's Open Story Tool as an innovative digital intervention for language learning. Merging Constructionist pedagogy with Task-Based Learning, the tool empowers learners as content creators through multimedia storytelling. The authors effectively demonstrate how its flexible design fosters both individual reflection and collaborative learning, offering valuable insights for democratizing language education through technology-enhanced approaches.

CHAPTER 5

Desired Role of Humanities in Safeguarding one's Eye Health

- Dr. M. Praveena[1]

[1] Assistant Professor, Department of Humanities and Sciences, Annamacharya University, Rajampet, prachen.2007@gmail.com

Abstract

Sarvendriyanam Nayanam Pradhanam – this is the popular saying prioritizing the significance of 'eye' of the five sensory organs. Preserving eye health has been a tough task in this modern society where using digital gadgets is an ordeal of the day of almost everyone. Avoidance of these gadgets is almost impossible amidst of this digitalized world. And one cannot go back to primitive days renouncing these modern-day comforts. Then, what's the way out? Health humanities may offer some solution to this critical issue. Thus, the present paper focuses on the desired role of humanities in preserving one's health, especially eye health.

Keywords: *Digital World, Modern Gadgets, Health, Humanities*

Humanities deal with fine arts, social sciences, literature, philosophy and similar disciplines which help human beings to live and lead their lives in a meaningful way. These disciplines help us to see the life from humanistic perspective imbibing both material and spiritual concepts. This knowledge keeps man on the right track living his life following certain morals and ethics. It also helps him to sympathize with fellow human beings and rightly identify his space in accordance with their mutual relation.

Health is the state of physical and mental condition of a person in carrying out his targets and responsibilities as well as handling himself/herself. Proper diet, physical exercise, meditation, mindfulness, relations and physical care help human beings in protecting their health. One should do all these things consciously to safeguard their health. In spite of all these cares, yet sometimes, one may have to meet health hazards. Then doctors come to our rescue.

Unfortunately, present generation is paying a little attention towards these pre-requisites of health and neglecting precautionary measures in protecting their sensitive organs like eyes. Here we can utilize humanities and their applications to bring awareness about this negligence. This convergence of humanities and health is the inter-disciplinary field of 'Health Humanities'.

According to Klugman & Lamb, "The health Humanities is a field concerned with understanding the human condition of health and illness in order to create knowledgeable and sensitive health care providers, patients, and family caregivers. As a field, the health humanities draws on the methodologies of the humanities ... to provide insight ... to people facing illness ... patients and policy makers and others concerned with the suffering of humans." (p. 3)

Biomedical Implementation of Additive Manufacturing Techniques

Chapter 11

Alginate-Based Composites in Additive Manufacturing

Ilangovan Pugazhenthi, Vishnu Kirthi Arivarasan

Book Editor(s):Arbind Prasad, Vimal Katiyar

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Summary

Alginate-based composites are also significant in additive manufacturing, commonly referred to as 3D printing. Alginate, a natural polysaccharide extracted from brown algae is characterized by its good bioavailability, biodegradability, and low toxicity, and hence has many applications in the biomedical field. This chapter deals with the incorporation of alginate with other materials in a bid to attain enhanced mechanical strength, sample fabrication, and effectiveness. Modifications of AM methods enable the preparation of individual patterns characterized by certain features, which can be utilized in tissue engineering, drug delivery systems, and wound healing. Hereby, it is possible to make a breakthrough in creating new trends and approaches to the improvement of the healthcare system due to the application of alginate, with its unique characteristics and the perspectives offered by 3D printing technology. This chapter also looks at the process of making alginate composites, the techniques used in 3D printing, and the important uses of 3D-printed alginate composite materials.

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AI - Based Resume Analysis and Career Recommendation System for Empowering Students

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Abstract—**An AI-powered platform to help students become the next generation of leaders. The gap between student learning and employability with personalized career guidance and leadership opportunities. The primary objective of this innovative project is to develop a Data-driven platform using Natural Language Processing (NLP) and Machine Learning (ML) to match student profiles with the latest business needs. We used a different model like Random Forest, SVM, and neural networks and ran them through a training pipeline, and evaluated using data preprocessing to clean up the data for tuning the features. The effectiveness of combining NLP with classic machine learning approaches to enhance career recommendation systems. The novelty of Campus-edge distinguishes itself by integrating open-source technology with a student-centric approach. Allowing users to compare models directly and empowering students to navigate their future career paths with confidence.So, they can make smarter choices about their careers and pick up real leadership skills along the way. SVM came out on top with a 96% accuracy rate better than any of the other models.**

Index Terms—**Employability, Higher Education, Natural Language Processing, Neural Networks, student-centric design**

I. Introduction

The job market's changing fast Automation, digital tools, and new skill demands are rewriting the rules. Even with degrees in hand, a lot of graduate's struggles to land jobs that match what they studied. There's a real disconnect between what students learn and what companies actually want. Many graduates in developing countries either don't have jobs or working in different roles which don't fit for qualifications. Over 60% of resumes never make it past applicant tracking systems, and here's another hurdle facing graduates because they don't match what employers are looking for desired position. Most of the career guidance tools and recruiter platforms focus on what employers need, not on making the process easier or more personal for students. So, students left out many job seeking platforms because, they provide limited personalization and accessibility approaching the companies or organizations.

Students required more guidance to get the job based on the current situation with the help of AI driven platforms. They need simple, smart tools that actually help them move from school to a real job. Students and Future Leaders come with Empowering AI to give them career recommendations to navigate the transition from education to employment.

CampusEdge isn't stuck in the past. It pulls together your resume, transcripts, and skill profiles, then runs that data through serious NLP and machine learning—things like tokenization, lemmatization, vectorization, plus classification algorithms like Random Forest, SVM, and Neural Networks. The idea is to go way beyond the old systems. CampusEdge is built for students in an academic setting, so you get real-time, transparent recommendations that actually match up with what employers want.

The key contributions of this work are as follows:

A. Gap Identification

Most current ATS and recruiter tools just don't cut it for students. There is a significant gap—no reliable educational platforms that actually help students determine their career directions.

B. Framework Development

For that reason we built CampusEdge. It is an AI-driven platform that leverages NLP and machine learning for matching student profiles to job descriptions, enabling students to access real, individualized career support.

C. Multi-Model Evaluation

We tested it extensively, performing tests on Random Forest, SVM, and Neural Networks. SVM made a strong impression, achieving a 96% accuracy rate validating that this technique is successful.

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Cloud-Based Hybrid AI Framework for Automated Grading and Adaptive Assessment in Higher Education

Publisher: IEEE Cite This PDF

Dhanunjaya Rao Kodali ; Karthi P ; Vivekanandan S ; M. Uma Maheswar ; Satish Kumar Nadimpalli ; Prabagar. S All Authors

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Abstract:
Computer science courses are expanding at a rapid pace, which means there are more assignments than ever before that need grading. This has led to problems like uneven grading and low-quality comments because of time restrictions. To find out where kids are struggling and how to fix it, teachers and students alike need formative assessment, which gives them constructive criticism all the time. An AGAA model including state-of-the-art deep learning and similarity-based approaches is suggested as a solution to these problems in this research. The input quality is improved through data preprocessing with CLAHE and features are effectively extracted using Cosine and Jaccard Similarity algorithms. By integrating an Attention Mechanism with a CNN and BiGRU the suggested hybrid architecture enhances grading precision and interpretability by zeroing in on the most important aspects inside student submissions. The experimental results validate the reliability and consistency of the evaluations provided by the CNN-BiGRU-AM, which reaches an impressive accuracy of 99.28%. Finally, the AGAA framework provides an intelligent and scalable answer to the problem of automated grading in higher education, which improves assessment procedures and student learning by means of timely, precise, and adaptable feedback.

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Behavioral Analytics in E-learning: Deep Learning for Real-Time Interaction and Performance Prediction

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***Abstract*— E-learning platforms generate vast amounts of data for improving personalized learning. Traditional methods like RNNs, CNNs, and machine learning models face limitations in processing, to provide real-time predictions. To address this, the study proposes MMFT, to analyze heterogeneous data and predict student performance in real-time. The MMFT model integrates clickstream data, engagement metrics, and textual information using specialized encoders, including 1D CNNs for sequential actions, and DistilBERT for text analysis. The model's self-attention mechanism captures complex patterns, while the cross-attention module aligns short- and long-term dependencies. It enables accurate predictions of engagement levels (low, medium, high) and performance scores, outperforming traditional models. Keys findings indicate that the MMFT achieves an accuracy of 92.5% for engagement classification and a 0.92 correlation coefficient between predicted and actual performance scores. This novel framework enhances learning experiences by providing real-time insights. Future directions include improving computational efficiency, expanding multi-modal applications, and exploring privacy-preserving methods.**

Keywords—Behavioral Analytics, E-learning, Multi-Modal Fusion Transformer, Real-Time Interaction, Performance Prediction

I. INTRODUCTION

On recent years, e-learning has taken significant roles in education systems to provide customized learning solutions by using web-based courses, tutorial and quizzes [1]. Most of these platforms are relatively new in universities hence the role of efficient approaches to estimating student engagement, learning behaviors and performance in near real time increases. These are behaviors that have to be understood fully in order to help improve learning, better retention and necessary intervention [2]. It is, however, important to note that existing approaches to behavioral analysis for e-learning applications are not devoid of challenges especially if people consider the type, quality and quantity of the behavioral information that is produced during learning sessions [3]. Old models adopted in e-learning analytics, for example, simple ML algorithms, deal with multivariate data processing containing single-modal information including quiz scores and session time without practically combining multiple behavioral signals [4]. Unfortunately, these models do not abstract most of the 'juice' of the students' interactions with the platform meaningfully: clickstream interactions, task engagement (time spent, videos watched) and even, to some degree, textual engagements or posts in the forum or chats. Moreover, massive offline methods do not fit into the real time prediction which forms the base of personalized learning interventions because they require the use of historical data and batch processing [5]. Some essential limitations are noticeable with traditional models used in behavioral analytics for e-learning. The problem with Logistic Regression is cannot model intricate non-linear characteristics in student behavioural characteristics implying reduced predictive ability. Decision trees are easy to understand and explain, but sometimes, they can be instable due to overfitting, while, on the other hand, Random forests are computationally intensive with big data.

Analyzing these data separately and not in real-time generate suboptimal prediction of engagement and performance of learners. Inadequate feedback or specific instructions assist learners in becoming disinterested, nonproductive or noncompletion of tasks which go against making e-learning platforms efficient. The implication of this study is the need to enhance the effectiveness of e-learning application especially in delivering customized lessons [6]. This means that using the MMFT, a range of sources of

HR Analytics in Predicting Employee Turnover in IT Industry: A Structural Equation Modeling Approach

G. Ramanjaneyulu, Somasekhar Donthu, B. Venkata Lakshmi, V. Mouneswari, Y. Mallikarjuna Achari, and S. Md. Ershad

Abstract

This study examines at how HR analytics may be used to forecast employee turnover in the IT sector. It focuses on five important factors: leadership support, HRM competency, data availability, technological infrastructure, and change management. Data was gathered from 255 HR professionals and IT company workers using a standardized questionnaire using a 5-point Likert scale format. AMOS was used to analyze the data in order to evaluate the predicted correlations among the determinants and employee turnover as well as test the model fit. According to the results, all five criteria have a considerable impact on turnover, but the effects of Leadership Support and Data Availability are more noticeable. With indices like CMIN/df, GFI, AGFI, CFI, and RMSEA falling within suggested bounds, the model showed a satisfactory match. The findings highlight how crucial it is to include data-driven tactics into HR procedures in order to accurately predict and lower employee turnover. For IT

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AI-Driven Digital Transformation in Treasury Operations: Cloud Computing and Real-Time Predictive Analytics for Liquidity Management

Publisher: IEEE Cite This PDF

G. Aruna Gudimetla ; C. Vindya Vasini ; M. Krishna Naidu ; G. Kanuka Raju ; A. K. Neeraja Rani ; Purnachandra Rao Suda All Authors

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Abstract:
The rapid emergence of artificial intelligence and cloud technologies has significantly transformed treasury operations by enabling organizations to manage liquidity more accurately, efficiently, and securely. The paper presents a common treasury solution that takes advantage of predictive analytics in real-time, cloud-computing and automated data intelligence to streamline its liquidity decision-making, risk-management and cash-flow management. The recommended system processes the mass data streams of financial information, identifies the changes in liquidity, designs dynamic forecasts that are used to undertake wise decisions. The framework ensures that it is scalable, fast in processing data, safe in managing and processing data, and in real-time monitoring the financial positions through the implementation of AI models in a cloud-native structure. Real-time analytics Dashboards will help the treasury teams to react to the market volatility and the regulatory complexities quicker since they will have actionable insights. Besides, the system will encourage transparency of the operations, interoperability in the different financial operations and control mechanisms that are automated to strengthen the overall governance of treasury. This research throws into the focus of debate how digital transformation through AI can take old treasury practices to a new level to be an active and data-driven ecosystem that could ensure financial stability in unstable business environments.

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Adoption and Effectiveness of Agile Practices in Large Scale Engineering Projects in Emerging Economies

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***Abstract*—The high rate of engineering project development in the emerging economies has enhanced the necessity to organize the assessment of agile adoption and its impact on the project performance. The research objective is to create an informative and easily understandable model of assessment to determine the intensity of adoption and the contribution of this contribution to the project results. It has been novel to combine the concept of fuzzy adoption scoring with graph-based modeling of workflow and an explainable boosting machine into one A3EF system. The suggested framework not only provides an analysis of interaction between teams but also transforms qualitative indicators into a measurable score and foretells performance improvements in a way that is easy to interpret. The use of experimental evaluation proves that the framework is correct in measuring the impact of agile integration with an accuracy of 98.68. The paper concludes the explainable modeling and workflow-driven analytics is a trusted mechanism of the study of how agile practices enhance the effectiveness of engineering projects.**

Keywords*— *Agile Adoption, Engineering Projects, Emerging Economies, Explainable Modeling, Fuzzy Scoring.

I. INTRODUCTION

Enormous engineering ventures in the third world world have been constantly experiencing issues that have to do with cost increase, schedule slippage, resources, and complexity of coordination [1]. As these environments become more rapid in their industrialization and infrastructural growth, the practice of agility is becoming more actively considered by project teams to enhance flexibility, responsiveness and communication [2]. The adoption of agile techniques used in the software development industry is undergoing trial in other fields of engineering like construction, energy, transportation and manufacturing [3]. Nevertheless, their performance in these multi-stakeholder environments of large sizes is questionable because of cultural differences, hierarchical organizational framework, and the lack of knowledge about the principles of agile by personnel in the engineering field [4]. Although several organizations started to adopt agile in a partial or experimental way, the results are quite different, and due to the lack of systematic assessment tools, measuring their actual effect becomes challenging. It is also important to understand the maturity and effectiveness of agile practices to guide organizations in ensuring a better project execution in a setting that is full of uncertainty and dynamic requirements [5]. The purpose of the present study is to conduct a detailed assessment of agile adoption through the combination of qualitative variables, performance, and workflow observation. To overcome this requirement, the hybrid model is suggested, which measures the level of adoption, determines obstacles, and forecasts the increase in performance in engineering settings [6]. The emphasis on new economies contributes to increasing relevance as they have different resource availability and organizational culture to developed countries [7]. This piece of work will help practitioners and policy makers make informed decisions on agile transformation in large-scale engineering projects by developing a systematic approach. The key contribution of this study followed as below:

- The research paper derives a composite evaluation model to quantify agile adoption and success in engineering projects.
- The work offers an organized framework, which combines the fuzzy scoring, process graph mapping, and predictive analytics.
- This model determines the major challenges and catalysts that have a role to play in agile maturity within emerging economies.
- This research provides an empirical decision-support system that helps enhance the performance of the projects and lead agile change.

The rest of this paper will be planned in the following four sections Review of the literature Adoption and Effectiveness of Agile Practices in Large Scale Engineering Projects in

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Digital Transformation and Innovation as Strategic Drivers of Sustainable Competitive Advantage: Evidence from Manufacturing SMEs

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Abstract

This era of rapid technological advancement has emerged as a critical strategic driver reshaping competitive dynamics across Industries. Specifically, Small and Medium Enterprises (SMEs) under the manufacturing segment have undergone digital transformation and innovation to achieve sustainable competitive advantage. This research is intended to investigate the influence of digital technologies and innovation capabilities on sustainable competitive advantage among manufacturing SMEs. The study uses primary data from selected manufacturing SMEs through a structured questionnaire. The proposed relationship among digital transformation intensity, innovation practices, and competitive performance indicators was tested using statistical technical tools like correlation and regression analysis. The study findings demonstrate that transformation in digital technologies significantly enhances innovation capabilities and long-term competitiveness. The results offer managerial implications for SME owners as well as policymakers in emerging economies seeking to promote long-term sustainable industrial growth through digital technologies and innovation.

Keywords: *Digital transformation, Innovation capability, Sustainable competitive advantage, Manufacturing SMEs, Industrial growth.*

1. Introduction

The evolution of rapid technological advancements in the contemporary business environment has fundamentally reshaped firms' operating, competing, and creating value. Digital transformation, defined as the strategic integration of digital technologies into all aspects of a firm's operations, is no longer an optional investment but an essential strategic initiative for firms seeking long-term competitiveness and survival (Al-Omush et al., 2023). This trend is particularly significant for Small and Medium Enterprises (SMEs), which constitute the backbone of most economies and contribute substantially to employment, innovation, and economic growth (Lu and Shaharudin, 2024). However, the competitive landscape today demands that SMEs go beyond traditional

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Chapter

AI Based Mutual Fund Investment Behavior: Exploring Awareness, Risk Tolerance, and Socio-Economic Influences

By M. Somasundaram, G. Kanuka Raju

Book Next-Generation Smart Systems

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ABSTRACT

Artificial Intelligence (AI) has changed how the financially inclined think about how to make the best possible decision while linking what they know to multiple cognitive tools to gain deeper insights from enormous datasets. This paper explores the outlines of this study as AI-based techniques are integrated to explore the perceptions and preferences of Mutual Fund investors in Bangalore. Unlike traditional statistical methods of analysis, this research uses AI-based means of communication such as machine learning, clustering and predictions to find behavioral patterns, risk tolerances, society economic factors affecting all investment decisions. The data was collected from convenience respondents 750 using structured surveys and evaluated with AI based tools to expose emergent, complex, non-linear variables between demographic factors and investment preferences. The results demonstrate that AI-powered models can accurately predict investors' participation, discover hidden behavioral clusters, and can provide personalized recommendations to investors. The manuscript recommends that institutional finance leverage AI-based robo-advisors, sentiment analysis tools, and predictive dashboards in their mutual fund marketing strategy to promote financial literacy, increase transparency, and enhance investor confidence in Mutual Funds.

Fraudulent Credit Card Transaction Detection Using a Hybrid Ensemble–Anomaly Detection Framework

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Abstract **– Rapid expansion of online transactions in sectors such as banking, telecommunications, retail, health and auto insurance, and online auction systems has coincided with an increase in the likelihood of fraudulent credit card transactions, which endanger individuals, businesses, and government agencies alike. Financial fraud, which is defined as the intentional use of misleading or false information to obtain money, has recently arisen as a major problem that has far-reaching effects on the internet economy. Approach: To tackle this problem, the study applies PCA for efficient feature extraction after rigorous data pretreatment methods such data cleaning to handle missing and noisy information. Here it present StrucAdapRBF-ELM, a new network classifier that takes advantage of a learning algorithm that combines density clustering, potential functions, and center-oriented repulsive forces. This algorithm cascades the hidden layer output of a StrucAdapRBF network into an ELM network, which is then optimised. Findings: In most classification tasks, the StrucAdapRBF-ELM outperforms the traditional ELM and multiple other classifiers, with an impressive accuracy rate of 97.44%. In conclusion, the suggested method shows great promise in improving the identification of fraudulent credit card transactions, providing a more precise and effective means of protecting online financial systems.**

Keywords—Credit Card Fraud (CCF), Radial Basis Function (RBF), Extreme Learning Machine (ELM), Principal Component Analysis (PCA),

I. Introduction

A credit card is a small, thin plastic or fiber card that contains personal information like a photo or signature. It enables the owner to charge products and services to the associated account, and regular withdrawals are made from that account. Credit is a financial instrument offered by banks that allows you to make purchases without using cash. It has a predetermined limit. Card issuers determine your credit limit based on your income, credit history, and credit score. Customers are obligated to repay the principal amount, interest, and any additional charges associated with a credit card loan in full by the due date or as agreed upon in the billing period[1]. Using a credit card without the owner's consent is called a credit card fraud transaction. It's an illegal and unauthorized way to get financial advantage. The use of a physical credit card or alternative means that do not necessitate physical card ownership can both be used to commit this conduct. Some examples of these techniques are application fraud, lost or stolen cards, and cardholder not present fraud. It is typical for criminals to commit lost or stolen card fraud, and this is making numerous large purchases using an unauthorized physical credit card until the card is blocked. When a criminal uses fraudulent information to apply for a credit card, this is known as application fraud[2]. It is difficult to identify application fraud since the perpetrator typically does not immediately make substantial transactions. Fraud known as Cardholder Not Present typically occurs during online or over-the-phone purchases and does not necessitate the physical presence of the cardholder. In most cases, rule-based or statistical approaches are employed by mainstream fraud detection systems.

Internet banking and other forms of digital transaction, most often including credit cards, have therefore grown in popularity among customers that want to conduct their financial transactions from the comfort of their own homes or places of work. The experts agree that a credit card is a plastic card that banks provide that contains a customer's personal information and allows them to make transactions anywhere in the world whenever they want[3]. But credit card fraud happens when people use their cards illegally for purchases, whether in person or online, and it may lead to a lot of money lost. As transactions may now be finalized simply based on the card's information, rather of the card's physical presence, fraudsters are finding it easier to do such crimes in today's digital environment. Beyond that, there have been a lot of dimensions that the evolution of credit card systems has impacted, forcing both large and small businesses to adjust their financial and marketing strategies. There is an immediate and critical need for better fraud detection methods in light of the current upsurge in fraudulent activity. Credit cards, internet payments, taxes, medical insurance, and cryptocurrency are all aspects of the financial sphere. Card transaction fraud is the specific kind of fraud that this study aims to address. There has been a steady rise in fraudulent transactions due to the increased usage of credit cards[4]. Financial fraud was defined as the deliberate application of unlawful means to acquire financial benefit. Financial losses, including payment amounts or non-monetary losses, can impact the loss of institutions to clients when fraud affects traders and financial institutions. They may be hard to spot in the near term, but they'll stand out upon closer inspection.

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Self-Learning Evolutionary Control Networks for Adaptive Energy Optimization in Smart IoT Cyber-Physical Systems

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***Abstract*—The explosive growth of IoT devices in cyber-physical systems (CPS) has caused tremendous energy consumption issues, requiring intelligent, scalable optimization techniques. Rule-based and static machine learning models do not learn adaptability in dynamic environments and are incapable of generalizing in diverse IoT deployments. The present study introduces a Self-Learning Evolutionary Control Network (SLECN) to obtain adaptive, real-time energy optimization in smart IoT-CPS environments. The architecture combines evolutionary algorithms for policy evolution with reinforcement learning for self-adaptation. It consists of preprocessing, feature engineering, model training, and deployment. A private IoT Energy Consumption dataset gathered from smart meters, sensors, and appliances in residential and commercial environments. The hybrid strategy ensures scalability, real-time adaptability, and less energy wastage without compromising system performance. The model attained 56.7% energy efficiency, 145 ms response time, and 95.4% resource utilization. Python was employed for full-stack implementation, which involved preprocessing, model training, and deployment.**

Keywords—IoT-CPS, Energy Optimization, Evolutionary Algorithms, Reinforcement Learning, Adaptive Control

I. INTRODUCTION

The rapidly increasing Internet of Things (IoT) technologies use has transformed the nature of cyber-physical systems (CPS) that can be observed in real-time, shared, and automatically controlled in several application domains such as intelligent transportation, smart grids, and industrial automation and smart buildings[1]. Such systems are inherently complex in that they have been physically interconnected, embedded with sensors and communication modules as well as having some element of computational intelligence[2]. Energy optimization is one of the fundamental problems in these settings because the growing number of IoT devices will lead to excessive consumption of energy, greater operating costs, and environmental impact[3]. The traditional energy management solutions based on the static or rule-based algorithm cannot be adaptable enough to handle dynamic and uncertain operating conditions, which include workloads fluctuations, fluctuations in the environmental conditions, and user requirements changes[4].

Various studies have discussed theories on energy minimization in IoT-based cyber-physical systems through various computational and control techniques.[5]. Initial practices developed on under rule-based and heuristic algorithms which although simple to implement were not flexible to adapt to the changing systems condition [6]. The recent literature has explored machine learning alternatives, such as reinforcement learning which is used to change load control dynamically and also the usage of neural networks to predict energy management. Energy distribution among IoT devices spread across a network has also been optimized using evolutionary methods like Genetic Algorithms (GA) and Particle Swarm Optimization (PSO) in an even more efficient manner than using static methods [7]. Nevertheless, these are usually plagued by shortcomings in scalability, real-time response, or the capacity to continuously learn from changing operating environments. However, these often suffer the limitation of being suboptimal in terms of the scalability or real-time response, or the ability to learn in real-time in the face of varying operating conditions. This disconnect inspires the application of integrated solutions that with the global search characteristics of evolutionary computation it makes use of self-optimizing mechanisms to long-term and adaptive optimization[8].

To overcome the limitation of static energy management, this research suggests a new Self-Learning Evolutionary Control Network (SLECN) for smart IoT cyber-physical systems' adaptive energy optimization. The solution integrates evolutionary algorithms, which are capable of handling intricate, dynamic, multi-objective problems, with an adaptive control framework that adapts to real-time operational feedback. With this combination, the system can learn to evolve optimal strategies, adapt to changes in the environment, and handle device heterogeneity effectively. The approach guarantees continuous energy savings, lower operating expenses, and increased efficiency, providing a scalable, self-sufficient, and context-aware solution for large-scale IoT deployments, finally promoting sustainable and smart CPS infrastructures. The key contribution of the study are follows as:

- Developed a hybrid Self-Learning Evolutionary Control Network for real-time energy optimization in IoT-CP

A Contemporary Survey on ML-Based Data Gathering with Mobile Sink in WSNs

Publisher: IEEE Cite This PDF

Uma Mahesh Boda ; Mallikharjuna Rao Nuka All Authors

34
Full
Text Views

Abstract
Document Sections
I. Introduction
II. Contemporary Survey
III. Open Challenges and Future Scope
IV. Conclusions
Authors
Figures
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Keywords
Metrics

Abstract:
Wireless Sensor Networks (WSNs) have increasingly adopted mobile sink (MS)-based data collection due to its advantages in energy efficiency and delay awareness. This approach simplifies scheduling and helps mitigate traditional issues such as uneven energy consumption and network congestion near static base stations. Although various MS strategies have been developed over the past decade, research has accelerated significantly in the last three years (2023-2025), focusing on optimizing path planning, minimizing latency, and balancing energy use across sensor nodes. In this context, we conduct a contemporary survey of publications from 2023 to 2025, highlighting key benefits such as extended network lifetime and reduced energy consumption, alongside limitations related to rendezvous point (RP) configurations and traversal path optimization. Considering the recent growth in artificial intelligence (AI) and machine learning (ML), we also identify research gaps and propose feasible solutions, including enhanced dynamic network adjustment, dynamic and real-time decision making, and integration of tiny AI/ML in WSN's data gathering through MS.

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CAPRI-DP: A Differentially Private Extension to Context-Aware Multi-Agent Privacy Frameworks

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***Abstract*—The rapid integration of large language models (LLMs) into enterprise systems has introduced new concerns around the exposure of personally identifiable information (PII) during multi-agent interactions. Existing frameworks like CAPRI attempt to mitigate such risks through contextual pseudonymization; however, these methods lack formal privacy guarantees and remain susceptible to inference attacks, particularly in structured reasoning workflows. To address this limitation, we propose CAPRI-DP, an enhanced framework that extends CAPRI with differentially private noise injection applied to sensitive fields within structured entity representations. The approach preserves semantic integrity by applying Laplace perturbations selectively, allowing external LLM agents to operate on masked data without sacrificing task accuracy. Our experiments, conducted across finance and healthcare use cases using ToolEmu-inspired tasks, reveal that CAPRI-DP improves upon fully pseudonymized setups by achieving a 52% success rate—ten percentage points higher—while maintaining fewer conversational turns. Although slightly less performant than entity-only configurations, the proposed method offers a tangible balance between privacy assurance and reasoning effectiveness. These findings suggest that CAPRI-DP can serve as a viable model for privacy-conscious, real-time LLM-agent deployments in sensitive operational domains.**

***Index Terms*—Differential privacy, large language models, pseudonymization, privacy-preserving AI, ReAct agents, structured reasoning, multi-agent systems, entity mapping.**

I. Introduction

In recent years, the emergence of large language models (LLMs) has redefined how organizations automate tasks involving language understanding, planning, and external tool use. From financial queries to healthcare recommendations, LLM agents are increasingly being deployed in workflows that involve high-stakes decision-making. However, these deployments often require sensitive inputs—names, diagnoses, account numbers—to be shared with external services, many of which operate in untrusted or opaque cloud environments. This shift has created an urgent need for privacy-preserving mechanisms that safeguard personal and institutional data while retaining the functional advantages of LLM-driven automation.

Initial attempts to address this tension have focused on techniques such as redaction, static masking, and pseudonymization. Among these, the CAPRI framework stands out for its structured approach to preserving context through local gatekeeper LLMs. By mapping named entities into reusable formats and replacing them with contextually consistent pseudonyms, CAPRI enables reversible, traceable interactions between private data sources and cloud-hosted LLM agents. Yet despite its strengths, CAPRI does not enforce any mathematical bounds on privacy leakage. In scenarios where an adversary may infer sensitive values from output patterns or cross-reference pseudonyms, the original framework offers limited protection.

To strengthen these guarantees, we introduce CAPRI-DP, a privacy-enhanced extension of CAPRI that integrates differential privacy mechanisms into the pseudonymization pipeline. Rather than treating privacy and utility as mutually exclusive, CAPRI-DP aims to preserve both by embedding noise at structurally defined points within entity graphs. Numeric fields such as age or transaction value are perturbed using Laplace mechanisms, while categorical features may employ randomized response. Importantly, these transformations are executed locally, prior to dispatching any data to the external LLM, ensuring that privacy protection is embedded by design and not bolted on afterward.

To validate our approach, we evaluated CAPRI-DP on a series of agent-driven tasks modeled after the ToolEmu benchmark, covering both financial (Venmo-like) and clini-

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Unresolved Challenges and Future Directions in AI-based Skin Cancer Detection: A Review of Data Diversity, Model Interpretability, and Clinical Integration

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***Abstract*—The fast development of artificial intelligence (AI) and machine learning (ML) have made it possible to make substantial advances in automated skin-cancer diagnosis, but its use in practice is still scarce. This paper focuses on three unresolved issues in AI-assisted dermatology by systematically reviewing recent progress in the field, such as data diversity, model interpretability, and clinical integration. The articles reviewed in 20172024 were analyzed according to a systematic search of medical-imaging databases and IEEE/Scopus repositories. The research shows that the main gaps that require attention include the lack of balance of the datasets within the demographics of skin-tone and the obscurity of deep-learning models, as well as regulatory or workflow obstacles as impediments to clinical validation. Thematic synthesis and comparative information about state-of-the-art methods, interpretability techniques, and fairness frameworks are described. Lastly, the review also suggests a roadmap for responsible, explainable, and workflow-centric AI systems in dermatology. The results indicate that success in the future lies not only in the accuracy of the model but also in fairness in the representation of data, clear decision-making, and flawless clinical usability.**

***Index Terms*—Dermatology, Skin Cancer, Deep Learning, Explainable AI, Fairness, Clinical Integration, Federated Learning.**

I. Introduction

Skin cancer is one of the most widespread and avoidable malignant diseases worldwide, its prevalence and occurrence among populations of various regions continue to grow [1]. Early diagnosis has a high chance of saving the life of a patient, but current diagnosis using visual inspection, thermoscope, and biopsy is subjective, time-consuming, and highly based on the expertise of the physician [2], [16].

The combination of artificial intelligence (AI) and machine learning (ML) methods, specifically convolutional neural networks (CNNs), transfer learning algorithms, and ensemble deep-learning systems, have been demonstrated to be used to perform skin-lesion classification and segmentation tasks at the level of dermatologists [3]-[5], [17]. However, there are still several challenges associated with the translation of experimental success to clinical use, such as a lack of standard workflows and real-life validation [6], [12].

Recent research has highlighted that algorithmic accuracy alone does not guaranty fairness, interpretability, and clinical reliability [7], [8], [9]. Discriminations in publicly released datasets, less transparent black-box predictions, and different hospital data specifications are some of the key challenges to the widespread implementation of medical-AI solutions [10]-[12]. To address these gaps, systematic review of current strategies and discovery of ongoing bottlenecks are necessary to provide fair and reliable diagnostic systems [13].

The objectives of this study are the following:

- Survey and integrate recent studies on AI-based skincancer detection;
- Determine unexplained issues related to data diversity, model interpretability, and clinical integration;
- Recommend an organized roadmap with possible solutions and future research directions.

Significant contributions comprise;

- A unified taxonomy of issues and intervention measures;
- Comparison of benchmark datasets and analysis methods such as ISIC [18] and HAM10000 [19];
- Suggestions on how to create equitable, explicable and workflow-compatible AI systems that are applicable in the clinical setting [36], [38], [45].

II. Problem Statement

Despite the impressive success of AI and ML in skin lesion analysis, the research-to-clinical-impact pipeline is blocked by three major challenges, including:

1) Data Diversity and Generalizability: Most accessible benchmark data are quite small, unbalanced, and biased towards the images of light-skinned specifications [7]. This is not just a way to try to minimize the robustness of the model, but it also has the potential to propagate healthcare disparities by performing poorly in underrepresented groups [8]. The most difficult part is the construction of large-scale, heterogeneous, and balanced datasets to represent clinical variability in the real world.

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Integrating CNN-LSTM and Physical Models for Predicting Climate Extremes

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Abstract – **Because of their unpredictable nature and the shortcomings of current models, it is extremely difficult to make reliable predictions about severe weather occurrences like heat waves, droughts, cold spells, heavy rain, and storms. Access to accurate forecasting technologies is crucial for stakeholders and legislators in light of the fact that the occurrence and severity of such catastrophes are on the rise due to climate change. In light of the critical need to develop new methods for predicting climatic extremes, this work presents a hybrid approach that combines deep learning with signal processing. When it comes to feature extraction, higher-order Daubechies wavelets inside the DWT architecture perform better than lower-order variations. To further optimise feature selection, a wrapper-structured CFS is also employed. In order to grasp the spatial and temporal patterns in time series data, the predictive model makes use of a CNN coupled with LSTM units. While LSTM models temporal dependencies and erratic trends, CNN extracts inter-variable relationships. A high prediction accuracy of 94.87% was achieved by the suggested CNNLST model in experiments, showing that it is useful in forecasting residential energy demand and related climate extremes. In this age of rapidly increasing climatic variability, this strategy has great promise for improving readiness and policy preparation.**

Keywords— **Discrete Wavelet Transform (DWT), Pearson Correlation Coefficient (PCC), Climate-Induced Disasters (CID), Global Climate Model (GCM), Global Greenhouse Gas (GHG).**

I. INTRODUCTION

Climate change is one of the most important problems facing the globe today. The expanding number of extreme storms, along alterations are all signs of the long-term effects of this process. This is the most important thing to know about what might occur as a consequence of climate change and how to prepare for it. Climate change has been related to more snow cover loss, faster sea level rise, more heat waves and droughts, stronger hurricanes, and most importantly, a steady and quick rise in global temperatures. There are essentially three broad types of climate-related dangers. First natural disasters caused by water, such as storms, droughts, and avalanches; Second, climatological dangers, which include heat waves, cold waves, and wildfires, all of which are caused by extremely high or low temperatures and third weather-related dangers, which encompass a wide range of storms such as snowstorms, thunderstorms, hurricanes, and tornadoes. hazards do not constitute risks until they impact elements-at-risk that are exposed and vulnerable to such degrees of hazards, potentially resulting in disasters. Cities need to be resilient so they can absorb disruption and keep running during and after CIDs if it want to lessen their impact. Predicting when and where disasters will strike is an important part of being resilient, since it allows for thorough preparation and proactive risk management[1]. The consequences of global warming are becoming more apparent by the day. More intense and frequent storms, droughts, wildfires, and floods have been recorded. All throughout the world, ecosystems are shifting, and with them, the agricultural practices and natural resources that sustain human civilisation. According to the climate change assessment from the UN panel, unless emissions of GHG are eradicated worldwide within a few years, the planet will suffer disastrous repercussions. Despite this, these emissions continue to climb annually. Both adaptation and mitigation strategies are necessary to combat climate change. Both problems have many facets. Alterations to power grids, transportation, buildings, industries, and land use patterns are necessary to reduce greenhouse gas emissions[2]. Understanding climate change and extreme events is essential for adaptation, which necessitates making plans for resilience and catastrophe management. There are many different methods to make a difference, which is both a challenge and an opportunity given the variety of challenges[3].

Temporary intense downpours, gales, tornadoes, hail, and other severe weather events are common during extreme weather events. The weather has brought about all of these disastrous events. Quickness and pinpoint accuracy are two of its defining features. Despite their short duration, they cause significant damage. Artificial weakening and prevention do not exist at this time. So, it's important to focus on prevention first and aim for a combination of the two. It is critical to raise the bar for severe convective weather forecasting and to fortify theoretical studies of the mechanism that causes these storms. Advances in science and technology have led to the

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Enhancing Stock Market Predictions through CNN-Based Hybrid Deep Learning Models

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***Abstract* – Due of the huge stakes and ever-changing nature of market behaviour, mathematical, engineering, and financial analysts have taken an intense interest in stock market prediction. The stock market is the pinnacle of investment venues due to the massive amount of money that flows through it. But, even with the EMH to consider, which states that markets are intrinsically efficient and unpredictable, it is still a difficult undertaking to predict market movements exactly. Predictive modelling is now within reach of ordinary and institutional investors alike thanks to the proliferation of financial data and the improvement in processing power. An improved model for stock market prediction using a hybrid LSTCN is suggested in this paper. First, the data is preprocessed to remove outliers and missing values. Then, technical indicators like the RSI and stochastic oscillators are extracted. To handle the unpredictability of financial data, the model uses quantile regression and an attention mechanism. The experimental results demonstrate that the hybrid LSTCN model achieves a remarkable 94.63% accuracy, surpassing that of conventional models. This proves that the model can accurately predict future outcomes. When it comes to making better stock market investments, the suggested method shows a lot of promise.**

Keywords—Stock Market Predication (SMP), Relative Strength Index (RSI), Efficient Market Hypothesis (EMH), Ensemble Adaptive Neuro-Fuzzy Inference System (ENANFIS).

I. INTRODUCTION

Trading stocks and derivatives of companies at predetermined prices takes place on a stock market. The stock market is driven by the supply and demand for shares. The stock market is a rapidly developing industry worldwide. There are a lot of people involved with this industry these days, either directly or indirectly. Consequently, being aware of industry trends becomes crucial. Stock price forecasting has so become more popular as the stock market has progressed. But because of its inherent volatility and the ease with which its value can fluctuate, forecasting stock prices is no easy feat. The stock market is typically a chaotic system that is non-linear, non-parametric, noisy, and deterministic[1]. Extreme price swings are common in India's stock market. Oil prices, the value of the dollar, the political climate, and worsening government finances are just a few of the macroeconomic variables that have a significant impact on them. The oil and gas industry is particularly vulnerable to these developments, but investors stand to gain substantially from putting their money into it. Therefore, comparing the leading stocks in this industry is worthwhile[2]. Stock unit costs are determined by looking at market capitalisation at a high level. Data about stock prices can be derived from a variety of scientific sources. Typically, stock indicators assess the financial situation of every country and are boosted from stock rates and high-level market assets. To give just one instance studies has shown that stock market capitalisation definitely limits a country's financial progress. There is too much ambiguity in the definition of a stock price fluctuation, putting stockholders at risk. Furthermore, the administration sometimes finds it challenging to determine the market relevance.

Prognostication of stock price movements have attracted a lot of interest from academics and businesses alike because to the large arbitrage profit potential it can provide. Historical trade data, including prices and volumes, is the mainstay of conventional quantitative trading prediction algorithms. Stock values represent all available information, according to the EMH[3]. Social media networks, together with traditional data sources, have emerged as a goldmine of useful information for stock market analysis. A wealth of sentiment data is available in user-generated material on popular sites like Reddit, Twitter, and Stock Twits, where people can discuss and share their opinions on stock and market trends. According to these numbers, the general public feels and thinks a certain way about certain equities and the market as a whole[4]. A growing area of research is the use of sentiment data from social media into models for predicting the stock market. In order to detect, measure, and investigate subjective insights and emotional states in text, sentiment analysis employs computational linguistics, text analysis, and NLP. Social media sentiment analysis allows researchers and analysts to gauge public opinion on specific equities or the market as a whole. Predicting short-term market changes driven by public emotion is made much easier using this strategy. Stock market forecasting can be made more thorough by combining standard market data with sentiment analysis from social media.

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AI-Driven Hybrid Optimization of BiFeO3–rGO Nanocomposites for High-Performance Energy Storage

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***Abstract* – BiFeO3–rGO nanocomposites are synthesized from BFO and rGO using the sol-gel process. By tuning heat treatment and rGO concentrations, these nanocomposites can have adjusted optical, structural, and morphological properties. Semi-spherical BiFeO3 nanoparticles are synthesized and attached to rGO nanosheets of various diameters. Deformed rhombohedral perovskite crystals result. This nanocomposite structure promotes charge separation and provides effective transport of photogenerated charge carriers across rGO nanosheets. In data analysis, predictive mean matching and min-max normalization standardize values and handle missing data. This paper introduces GPCA, a new feature extraction method that optimizes data representation by combining Information Gain with Principal Component Analysis. They also propose a deep learning model called RNN-BiRNN-LSTM with Gaussian noise that uses RNNs, BiRNNs, and LSTM networks. These sections collaborate to efficiently manage long-term contextual information and record dependencies. With 94.06% prediction accuracy, the RBRLG model outperforms conventional methods. The integration of advanced nanomaterials with machine learning offers a viable prediction and analysis method for BGO nanocomposites in intelligent systems and functional applications.**

***Keywords*— Reduced Graphene Oxide (rGO), Predictive Mean Matching (PMM), Radio Frequency (RF), Recurrent Neural Networks (RNN), Long short-term memory (LSTM).**

I. INTRODUCTION

The demand for high-performance energy storage technology and equipment has been rising significantly in recent times because to the ongoing development of pulsed power technology, mobile devices, and novel energy vehicles. The energy density of conventional electrostatic capacitors is low, making them ill-suited to the demands of today's electrical grid and gadgets. There are a lot of benefits to using traditional polymers like polyimide, poly, and their binary or ternary copolymers, such as low pricing, easy processing, and small volume. Therefore, current research is focused on finding ways to increase the energy storage density of film capacitors. An effective method to enhance the energy storage density of composites is to increase the breakdown field strength and relative dielectric constant, as per the energy storage density calculation formula. To increase the energy storage density of thin film capacitors, another viable option is to incorporate nanofillers into the polymer matrix. Many challenges, however, exist throughout the process, beginning with experimental design and continuing through experimental preparation of composites[1]. Understanding the microscopic mechanism of energy storage requires establishing the direct relationship between the microstructure and properties of composite dielectrics. However, traditional experimental methods have the clear drawbacks of low efficiency and aim blindness. Understanding the polarization contribution from integrated particles is made easier with effective medium theory, however for particles with irregular shapes, the prediction accuracy is significantly lowered[2]. One example of a simulation method grounded in physics is the FEM. FEM allows for the flexible development of any geometric model of composite dielectrics and the precise calculation of electric field and space charge distributions at the local scale. These mesoscopic factors allow for the analysis and establishment of the connection between the structure and properties of composite materials.

Nanomaterials are classified according to their unique composition, structure, and set of characteristics. Designing, characterizing, producing, and applying structures, devices, and systems that are shaped and sized at the nanoscale are all part of nanotechnology. Nanoscience and nanotechnology include a wide range of fields that share information and methods, from environmental science and biology to physics and materials science as well as technology and medicine. The object under study and/or the instruments used to control it are of nanoscale size, that serves as the common bond[3]. Some have even gone so far as to say that the advent of nanotechnologies marked a watershed moment in the evolution of modern industry. The extraordinary qualities and potential for revolutionary change of nanomaterials have made them ubiquitous and essential in numerous fields. By utilizing nanotechnology in membrane synthesis, the energy sector has been able to create more selective membranes for use in nanofiltration, that improves the quality of treated water and wastewater. The importance of boosting renewable energy sources and increasing energy efficiency cannot be overstated. ESDs and ESSs are being developed and managed

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Reinforcement Learning and IoT-Enabled Framework for Optimal Planning of Solar PV-Based Electric Vehicle Charging Stations

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***Abstract*— The rapid growth of electric vehicles (EVs) and the growing integration of solar photovoltaic (PV) systems provide considerable challenges for the planning and real-time management of charging infrastructures. Current methodologies frequently depend on static optimisation or rule-based scheduling, which fails to account for variable EV demand, variable solar generation, and grid limitations. The proposed study presents an IoT-integrated reinforcement learning framework for the optimal planning, location, and scaling of PV–BESS–EVSE systems, ensuring real-time adaptive functionality. Data from electric vehicle charging sessions, photovoltaic generation profiles, and environmental variables are collected through IoT devices and analysed using advanced feature engineering and forecasting models, including LSTM and CNN–LSTM hybrids. The reinforcement learning agent allocates charging power and BESS dispatch dynamically, depending upon anticipated demand and photovoltaic availability. The study indicates that the proposed system attains enhanced accuracy (97.1%), precision (96.8%), recall (97.3%), F1-score (97.0%), RMSE (3.9%), and R^2 (0.98), outperforming the baseline DQN, LSTM, and linear programming methodologies. The system demonstrates resilience to demand variability, enhanced solar energy utilisation, and effective station planning, underscoring its promise as a scalable and intelligent solution for sustainable urban electric vehicle infrastructure.**

Keywords*— *Reinforcement Learning, Internet of Things (IoT), Electric Vehicle Charging Stations, Solar Photovoltaic (PV), Battery Energy Storage System (BESS), Optimal Planning, Siting and Sizing, Feature Engineering, Time-Series Forecasting, LSTM, CNN–LSTM, Energy Management, Smart Grid, Demand Prediction, PV Utilization.

I. INTRODUCTION

The increasing use of electric vehicles and solar PV systems has generated complex problems for the planning and operation of charging infrastructures in urban settings. Current methodologies frequently depend on static or rule-based optimisation techniques, which lack the capacity to adjust dynamically to variable EV demand, intermittent solar production, and shifting grid limitations. This results in underutilised photovoltaic resources, elevated energy expenses, grid congestion, and inefficient positioning of charging stations. In addition, conventional forecasting techniques may insufficiently account for nonlinear relationships in electric vehicle arrival patterns and renewable energy production. An urgent requirement exists for an advanced framework that combines real-time data collection, predictive analytics, and adaptive decision-making to enhance both long-term infrastructure strategy and short-term operational management. This system would strengthen grid stability, increase energy efficiency, minimise operational expenses, and deliver dependable service to electric vehicle customers, while promoting sustainable urban transportation and optimising the use of renewable energy resources. This study examines machine learning applications in the planning of electric vehicle charging infrastructure, including station location and demand forecasting through three case analyses [1]. Still, it is inadequate in real-time operational integration and reinforcement learning; which suggested RL–IoT architecture handles dynamic scheduling and adaptive control. The study categorises global electric vehicle charging station placement and scheduling models, highlighting location-specific performance and challenges. Metrics are qualitative in nature [2]. It is inadequate in predictive and real-time decision-making, which our system does through LSTM-based forecasting and RL-based dynamic operation. This paper examines the saturation of EV charging infrastructure in the EU and Bulgaria, highlighting vehicle-to-station ratios and coverage limitations [3]. It offers descriptive measurements but lacks optimisation for location or sizing; which proposed research provides predictive, optimization-driven siting and capacity planning with quantitative performance indicators. Meso-level EVCI planning employing international best practices offers potential sites, capacity evaluations, and demand projections [4]. Although outputs inform policy, micro-level optimisation and adaptive real-time scheduling are absent; the proposed RL–IoT system includes predictive analytics and dynamic control to enhance efficiency and utilisation. A study on Indian electric vehicle adoption identifies obstacles, insufficient infrastructural penetration, and legislative problems. Metrics concentrate on station condition and allocation [5]. It lacks of integrated forecasting and intelligent scheduling; the suggested methodology

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Sewage Water Monitoring Using Raspberry Pi

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***Abstract*—The goal of this work is to use a Raspberry Pi to create an automated sewage water monitoring system that incorporates multiple sensors to measure water quality and allow for remote monitoring. Critical water parameters are monitored by the system using an ultrasonic sensor, a pH sensor, a DHT11 sensor (for temperature and humidity), and an MQ2 gas sensor. ThingSpeak, an Internet of Things platform, receives the data from these sensors and stores and visualises it for real-time analysis. In addition to offering remote access to the water quality data for efficient decision-making and action, this strategy guarantees proactive water filtration and quality management. The system automatically regulates two water pumps and matching LEDs based on the sensor data. If the water quality is within acceptable bounds, a green LED and pump are engaged; if it is not, a red LED and secondary pump are triggered. In the event of critical water conditions, consumers are also alerted by SMS message. In addition to offering remote access to the water quality data for efficient decision-making and action, this strategy guarantees proactive water filtration and quality management.**

***Index Terms*—Sewage Water Monitoring, Raspberry Pi, IoT, Automation, Water Quality Sensors**

I. Introduction

Wastewater is a significant source of environmental contamination due to its high concentration of organic waste, germs, and chemical contaminants. Sewage water, also known as wastewater. To protect public health and maintain environmental sustainability, this water must be monitored and treated effectively. Sewage water monitoring has historically relied on laboratory testing and manual sampling, both of which are resource-intensive, time-consuming, and frequently unable to provide real-time evaluation [1]. By reducing the need for manual data collection and analysis, IoT systems lower operational costs and save time. The centralized data storage and analysis platforms streamline the monitoring process, making it more efficient and less labour-intensive

Automation systems that continually monitor important water quality indicators, including pH, temperature, turbidity, dissolved oxygen, and chemical oxygen demand, have been made possible by recent developments in the Internet of Things (IoT) and wireless sensor networks (WSNs) [1]. These systems offer real-time data collecting, analysis, and cloud integration for remote access and control. They are usually driven by microcontrollers or single-board computers like the Raspberry Pi [2], [3]. Integrated IoT-based sensor systems are developed for sewage water quality monitoring, incorporating turbidity, pH, and temperature sensors. Similarly, IoT is required to enhance wastewater monitoring by using appropriate hardware, connectivity technology and advanced data analytics [4].

The work in [2] showed how to integrate a Raspberry Pi with pH, turbidity, and dissolved oxygen sensors to allow for cloud-based sewage treatment plant monitoring. The use of several IoT-enabled sensors and smartphone apps for proactive water quality control in wastewater systems was also investigated by [3] . As suggested in [5], low-cost designs improve accessibility and enable deployment in treatment centers in both urban and rural areas.

Building on these advancements, this paper introduces an affordable Internet of Things (IoT) sewage water monitoring system that uses a Raspberry Pi and several sensors. It has automated control features including SMS notifications and pump activation, as well as real-time data upload to ThingSpeak. By addressing the shortcomings of existing systems, this strategy helps to manage wastewater in a more intelligent and responsive manner.

II. Literature Survey

Water quality monitoring has changed dramatically as a result of recent developments in 5G [6], embedded systems and the IoT. IoT plays a vital role across various fields—such as sewage monitoring, agriculture, environmental sensing, healthcare, maritime [7] and smart cities—by enabling real-time data collection, remote monitoring, and automated decision-making, thereby improving efficiency, safety, and resource management [8], [9]. In particular, the combination of smart sensors, microcontrollers, and cloud platforms has been the

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2025 2nd International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS)

IoT–Naive Bayes and Random Forest Hybrid Framework for Cyclone Prediction and Early Warning in Smart Cities

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***Abstract*—Economic loss, infrastructure protection, and lives saved are all outcomes of smart city cyclone prediction and early warning systems. Because cyclonic systems are complex and ever-changing, conventional weather models aren't very good at predicting how strong a cyclone will be. The built environment and people living in coastal areas have been greatly affected by the increasing frequency and intensity of storms in recent decades. Principal Component Analysis (PCA) for feature extraction and data normalisation to guarantee data quality are two examples of the advanced data-driven approaches needed for this assignment. They offer a hybrid approach called NB-PSO that merges the probabilistic classification of Naïve Bayes with an improved version of the PSO algorithm. The cyclone prediction probability (CP) is computed by Naïve Bayes, and for smart city early warning signal accuracy, PSO optimises the selection of CP. Based on experimental results, the NB-PSO model has a superior prediction accuracy of 95.60 percent compared to its competitors. The results demonstrate that smart cities can be well-prepared for and resilient in the face of disasters when optimisation for cyclone prediction and early warning is combined with machine learning.**

Keywords—principal component analysis (PCA), cyclone prediction (CP), partial swarm optimization (PSO), tropical cyclone (TC)

I. INTRODUCTION

Cyclones have become more frequent and stronger in recent decades; these has caused major problems for coastal towns and infrastructure around the world. Natural disasters like this endanger human lives, destroy buildings, and cause damage on people's daily lives, not to mention drain the economy[1]. It is critical to accurately estimate the severity of cyclones in order to lessen their negative consequences and enhance disaster preparedness. Making reliable predictions about the intensity of a cyclone is the primary goal of precise intensity estimation. The meteorological industry must immediately begin initializing prediction models and disaster management. However, domain knowledge is needed to automatically remove the structure elements and parameters, making accurate and rapid intensity assessment a difficulty. An equatorial cyclone forms in the warm waters of the ocean. TC are facilitated by the creation of low-pressure areas caused by rising sea surface temperatures and moisture[2]. Variations in these areas suggest changes in the cyclone's strength. An extremely dangerous eyewall with extremely high winds and heavy rainfall surrounds the calm eye located in the center of the cyclone.

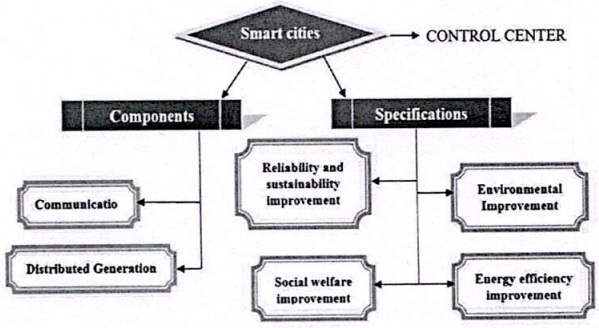

Fig. 1. The Smart Cities Key Aspects

Better public information about weather conditions allows for essential steps to be taken to save lives and reduce property damage, making the proposed weather forecasting system in smart cities more useful in averting human loss and property damage[3]. Figure 1 illustrates the essential features of smart cities. This happens when powerful TC, like hurricanes or typhoons, approach and pass near coastal areas. The cyclone and the ocean interact dynamically, and factors like slow atmospheric pressure and strong winds play a major role in this process. There is a rapid rise in sea level because these cyclones displace a large amount of water.

Storm surges, when coupled with high tides, can create significant coastal flooding, that in turn causes infrastructure damage, the loss of key services, and considerable property damage[4]. Storm surges inundate residential areas, complicating responses to emergencies and heightening the risk of mortality, especially can densely populated regions.

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A Scalable Predictive Analytics Framework for Insurance Cross-Selling in Financial Services using Classical Predictive Algorithms

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Abstract- Maximizing policy adoption through cross-selling is a key growth lever in the insurance sector. This study introduces a big-data–oriented predictive framework that operationalizes distributed computing and advanced machine-learning methodologies to pinpoint customers with a high propensity for purchasing supplementary coverage. A voluminous real-world dataset undergoes rigorous feature engineering and transformation before being processed via PySpark based parallel pipelines, ensuring scalability and efficiency. Multiple predictive paradigms—spanning gradient-boosted ensembles and other state-of-the-art algorithms—are benchmarked to assess their discriminative power and computational performance. Empirical evaluations demonstrate marked improvements in both predictive accuracy and execution speed, underscoring the value of scalable analytics in optimizing cross-selling campaigns. The work broadens the discourse on large-scale predictive modeling and contributes concrete evidence for data-driven decision-making in financial services.

Keywords: Insurance Cross-Selling, Machine Learning, PySpark, Big Data Analytics, XGBoost, Logistic Regression, Decision Tree, Naive Bayes, Support Vector Machine

I. INTRODUCTION

Cross-selling is very vital in the insurance sector because the main objective of the strategy is to raise the lifetime value of the customer by providing more insurance services to the current customers. A proper forecast of the probability of the presence of cross-selling opportunities can streamline marketing activities, enhance customer satisfaction, and maximize business revenue. As huge volumes of data continue to dominate business operations in the contemporary society, scaling and efficient machine learning models are becoming necessary to extract actionable information.

This paper aims at determining the opportunities of cross-selling within the insurance industry by applying diverse machine learning strategies. We use both preprocessing and modeling approaches: using the capabilities of distributed computing of PySpark and applying standard processing algorithms. Five models are applied in the PySpark framework, which are Support Vector Machine (SVM), XGBoost, Logistic Regression, Decision Tree, and Naive Bayes due to the advantages of scalability and speed of calculation. Concurrently, four models using non-PySpark models, namely, XGBoost, Logistic Regression, Decision Tree, and Naive Bayes are built to give a comparative analysis of the traditional approach.

The data that has been used in the present research, which is obtained on Kaggle, comprises the scaled features associated with insurance and is pre-processed to achieve the best possible results with models. In this study, we recommend the significance of the preprocess, feature selection and computational efficiency in managing large datasets in the insurance industry. Through the comparison of the performance of the models to both the frameworks, we hope to point out the trade-offs in the accu- racy, scalability, and time of computation and this will prove useful to practitioners and researchers in the field.

A. Related Work

Deepak Kumar Patel et al. [1] The article "Application of Extreme Learning Machine in Detecting Auto Insurance Fraud provides a complete literature review of the various methods used in detecting false insurance claims to vehicles. It stresses on quantitative procedures to identify the false claims, like the efficient portfolios in mean-variance, in which Sharpe ratios are calculated. More so, Sundarkumar and Ravi refined the dataset and introduced an undersampling model that integrates the One Class Support Vector Machine (OCSVM) and the k-Reverse nearest Neighborhood (k-RNN) models and enhanced the detection of bogus claims. Some of the supervised learning algorithms discussed in the survey are Support Vector Machine (SVM), Logistic Regression (LR), Multi-Layer Perceptron (MLP), Probabilistic Neural Network (PNN), Decision Tree (DT) and Group Method of Data Handling (GMDH). To identify authentic and fraudulent claims, these algorithms were run on an under sampled dataset.

In addition to this introduced the Spectral Ranking Anomaly (SRA) method which detects fraudulent claims by approximating the first non-principal eigenvector of a

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SVM-based AI Framework for Disaster Forecasting and Search & Rescue

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***Abstract*—Collapsed structures and dangerous environs frequently impede workers from reaching victims during catastrophe Rescue and Search (SAR) operations, resulting in crucial casualties. This study combines robotics with machine learning to make search and rescue missions safer and more efficient. In order to identify the presence of people or human body parts, robots can gather visual data while navigating hazardous or inaccessible locations. A CNN (Convolutional Neural Network) is used to extract strong characteristics from photographs of disasters in order to achieve reliable human detection. Then, to train these characteristics for accurate classification in complicated situations, we use the Support Vector Machine, or SVM, technique. Using measures like precision, recall, accuracy, F1- Score, and Confused Matrix, the SVM model consistently achieves great results when assessed. Due to the scarcity of current catastrophe datasets, we built and enhanced a simulated disaster picture collection to ensure accurate model training. The dataset may be viewed by anybody using the specified GitHub URL; it is freely available. To improve human detection in automation of disaster rescue operations, the suggested SVM-based architecture shows a highly successful method.**

Keywords—Disaster Response, Search and Rescue (SAR), Human Detection, Convolutional Neural Network (CNN), Support Vector Machine (SVM), Robotic Assistance, Feature Extraction, Data Augmentation, Machine Learning, Virtual Disaster Dataset

I. Introduction

Search for survivors (SAR) operations encounter significant obstacles while trying to find and save people in the aftermath of disasters like explosions, building collapses, or earthquakes. There is a higher chance of casualties during manual intervention due to the risks and delays caused by unstable buildings[1],

hazardous debris, and blocked passageways. Despite their usefulness, traditional SAR systems have limitations, such as operator mobility, visibility, and the difficulty of working efficiently in high-risk zones[2].

There are now more ways than ever before to automate and improve SAR missions because to the combination of sophisticated robots and machine intelligence. Cameras, sensors, and smart algorithms allow robotic platforms to explore dangerous locations securely, find human presence indicators[3] and communicate vital information to rescue personnel. When it comes to visual identification tasks, Convolutional Neural Network (CNNs) stand out among other machine learning algorithms. They provide strong feature extraction from intricate images captured at catastrophe sites[4][5]. When used for SAR operations, CNNs are able to reliably detect human characteristics or body parts, regardless of how congested or partially obscured the environment is.

After the features are collected from the CNN, an SVM classifier, or Support Vector Machine, is applied to further enhance the detection reliability. SVM's capacity to decrease misclassifications under difficult visual settings and maximize the margin amongst classes makes it a good fit for complicated classification issues[6]. Timely rescue efforts rely on human detection, which this method guarantees will be accurate and consistent. To guarantee the system's efficacy and dependability prior to deployment, performance is thoroughly assessed utilizing measures including precision, recall, accuracy, F1-Score, or Confusion Matrix[7].

Lack of disaster-specific datasets for human identification is another big obstacle. Depending on your preference, current datasets tend to be too general or fail to adequately portray actual SAR scenarios. In response, a unique dataset was built utilizing data augmented to increase the dataset's size and variety[8], together with photographs taken from the internet and virtual disaster simulations. This guarantees that the suggested SVM-based system is capable of generalizing well to many types of catastrophe scenarios[9].

The suggested system improves human recognition in catastrophe situations by integrating robotic navigation, convolutional neural network (CNN) feature extraction, and support vector machine (SVM) classification. Rescue workers may be safer, reaction times can be optimized[10], and the likelihood of lifesaving during emergency operations can be increased using this method since victim identification is now more accurate and faster shown in fig.1.

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