

2025 International Conference on Modern Sustainable Systems (CMSS 2025)

**Shah Alam, Malaysia
12-14 August 2025**

Pages 1-634



**IEEE Catalog Number: CFP250Q9-POD
ISBN: 979-8-3315-6511-4**

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP250Q9-POD
ISBN (Print-On-Demand):	979-8-3315-6511-4
ISBN (Online):	979-8-3315-6510-7

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

International Conference on Modern Sustainable Systems

CMSS 2025

12-14, August 2025

Table of Contents

S. No	Paper Title/ Author Name	Page. No
1	Design and Development of a Continuous Passive Motion (CPM) Machine for Post-Operative Joint Rehabilitation using Embedded Control Naga Vamsi Thota, Sneha K, Aarthi Kallepalli, Kiran Babu Kaki	1
2	Enhancing Electrical Power Distribution Network Resilience from Kite Disturbances Adinda Sekar Santia, Sudarmono Sasmono, Muhammad Zakiyullah Romdlony	5
3	CNN-based SoC Estimation for EV Batteries Under Dynamic Conditions P. Govindasamy, M. Shyamalagowri, D Sabapathi, Sampathkumar R	11
4	Optimized Bi-Directional Buck-Boost Converter for Hybrid V2G Storage S. Gomathi, P. Tamilvani, P. Loganathan, M. Shyamalagowri	18
5	Optimized Multi-Rate PI Control for PMSM Torque in HEVs C. Saravanan, S. Dhanapal, K. Tamilselvan, M. Shyamalagowri	25
6	Comparative Analysis of Phase Detector Architectures for High-Speed, Low-Power PLLs in Synopsys 14nm Technology S. Shiyamala, P. A. Priya, P. K. Kowsalya	33
7	Project HiDRO: High-Intensity Downpour Research and Observations for Sustainable Soil Health and Climate-Resilient Agriculture Keyaan Shah, Suraj Sharma	38
8	Intelligent Predictive Maintenance for Sustainable Manufacturing: A Digital Twin Application in Engine Cylinder Cleaning Lines Hongyuan Wang, Lin Guo	47
9	Towards Sustainable Precision Manufacturing: Sensor-Driven Vibration Suppression and Adaptive Control in CNC Machining Yongle Pi	54
10	Support Vector Regression Approach to Optimal Power Flow Analysis in Smart Grids with IoT R. Suresh, S. Premanand, S. M. Soundria, R. Kavitha, S Murugan, S. Jayashree Ananth	61
11	Self-Driven Vehicle: Learning to Drive in A Simulated Virtual Environment R. Dravid Rahul, S. Suresh Kumar	67
12	Thermal Optimization of 3D Printer Hotend Keertana Iyer, Saniya Jadhav, Mrunal Gorghate, Mukund Nalawade, Viren Jadhav, Rajkumar Bhagat	74
13	Performance Observations in Power System with Grid Forming Inverter Mummera Poorna chander, Poonam Upadhyay, M. Naga Jyothi	82
14	Predictive Analytics and Self-Healing Mechanism for Lithium-Ion Battery Management Y. Dharshan, D. Devasena, R. Bharathi, S. Shastika, J. S. Herradlin, K. Karishma	86

15	From Mechanisms to Mitigation: Addressing the Threat of Antimicrobial Resistance Across Ecosystems Sruthi SanilKumar, Abhilash K S	92
16	SmartGridAI-LSTM: A Sequential Deep Learning Framework for Adaptive Power Flow Regulation in Nano-Grids using Artificial Intelligence Jarabala Ranga, Gopinath Palai, Rabi N Satpathy	99
17	An Enhanced Fault Detection and Power Tracking in Photovoltaic Systems using Particle Swarm Optimization Kalpana Devi S, Kamatchi Kannan V, K. Thenmalar, A. Sheela, K. Madumathi, Ponmurugan P	106
18	LSTM based Deep Learning Model for PV Power Forecasting Alagar Karthick, Pulivarthi Bindumadhavi, Seeniappan Kaliappan, S. Kanmani Jebaseeli	113
19	Prediction of Photovoltaic Output Power using GRU and Weather Data Fusion Alagar Karthick, Chinthala Manikanta, Seeniappan Kaliappan, U. Esakkiammal	118
20	Optimized Control of Forced Draft Fans for Thermal Power Plant Efficiency K. Prithivi, N. Priyadharshini, Sree Varshaa V A, Sushmitha Siva S, Rahul R	122
21	Evaluating the Impact of Meteorological Parameters on Solar Energy: Insights from RStudio and SPSS N. Kalaivani, E. Mona Visalakshidevi, R. Suguna	128
22	Data-Driven Forecasting for Grid Stability: Implementing XGBoost in Smart Energy Systems Rekha P M, Bhumika C P	139
23	Adaptive Control and Fault Diagnosis Technology of Motor Drive System for New Energy Vehicles Yu Cai, Xiaoling Li	147
24	Strategic Placement of Electric Vehicle Charging Station Integrated with Distributed Generation using HMFO B. Mohan, M. sudhakaran	153
25	Design of a Coplanar Full Adder using MV5 Gate in Quantum-Dot Technology Sirojiddin Salimov, Nuriddin Safoev, Shoakrom Shomakhsudov, Temur Eshniyozov, Orzikul Shukurov	159
26	Comparative Performance Analysis of Waste Materials for Sustainable Electricity Generation Sushmita Deb, Rakesh Dhiman, Kumaraswamy B G	163
27	Machine Learning Models for Energy Consumption Sensors in Wireless Sensor Networks Shashidhar Gurav, Tayi Preethi Rangamani, S. K. Muthusundar, A. C. Charumathi, M. S. Nidhya, Balajee Maram	172
28	IoT-Driven Resource Optimization for Sustainable Healthcare Systems A Ambikapathy, Kimmi Verma, R. Kishore Kanna, Setu Garg, Aditya Dayal Tyagi	178
29	Enhancing Solar Energy Forecasting and Grid Management using Explainable AI Techniques S. Senthil Kumar, G. Saritha, G. Visalaxi, D. Sivaganesan, V. Mani, Ranjith	184
30	Towards Robust Federated Learning in IoT Systems: A Review of Fault-Tolerance Strategies	193

	Tejinder Kaur, Anima Bag, Mohamed Imtiaz N, Mukesh Soni, Pradosh Kumar Gantayat, Uttam Kumar Jena	
31	Comparative Analysis of Sound Synthesis Methods and Development of a Compact Analog Synthesizer Amya Gupta, Suraj Sharma	198
32	Machine Learning-based Energy Consumption Forecasting for Smart Homes using Environmental Variables R. V. Deepikaa Shri, N. Aravindha Babu, R. Kishore Kanna, Balasubramaniam. D, S. Palanikumar, S. Sivarajan	208
33	The Performance Analysis and Monitoring of IoT Enabled Islanded Mode Photovoltaic (PV) System using Simulation Hardev Meena, Leena G	216
34	AI-based Predictive and Optimal Control for Microgrid Energy Management: Design and Implementation N Alagusundari, Arthi D, Kumaran E, Shandon Samuel S, Dikesh K, Venkat Raman B	222
35	A Smart Disaster Management System for Emergency Hospital Allocation Arya Patekhede, Sakshi Warule, Sakshi Rathod, Shruti Sultan, Varsha Pimprale	229
36	An Adaptive Cleaning System for Solar Panels using Environmental and Performance Sensing A. Sindhu, Roopasree A, Sarankumar V, Kishore G R K, Sanjith R G, Ajith K	239
37	Hybrid Metamaterial RF MEMS Shunt Switches with Origami and Spiral Beams for K-Band Y. Anusha, Koushik Guha, Kavicharan Mummaneni, Jagadeesh Thati	246
38	A Sustainable Energy Model for Grid Outage-Prone Regions: Hybrid Microgrid Application Md. Feroz Ali, Md. Rafiqul Islam Sheikh, Md. Esmay Azam, Diganto Biswas, Md Abdur Razzak	255
39	Optimizing a Sustainable Hybrid Renewable Microgrid for EV and Hydrogen Applications Md. Feroz Ali, Md. Rafiqul Islam Sheikh, Diganto Biswas, Md Abdur Razzak	261
40	A Hybrid Renewable Microgrid with Hydrogen Storage for Residential Applications: Techno-Economic Insights Md. Feroz Ali, Md. Esmay Azam, Diganto Biswas, Nobonita Sarkar, Md Abdur Razzak	267
41	Enhancing the Performance of All-Inorganic Perovskite Solar Cells by using AgInSe ₂ as a Current Augmentation Layer Mst. Aysha Siddika, Md. Rafiqul Islam Sheikh, Md. Feroz Ali, Sabbir Ahmed Sayeem, Md Abdur Razzak	273
42	SOS-Enabled Wearable for Personal Security with GPS Tracking and Fall Detection S Sandhya, A M Dhasaradh, K M Fasil, S Lithin, M Muhammed Habinsha, P P Alan Anugrah	279
43	Voltage Regulation and Power Quality Enhancement in EV-Integrated Smart Grids using Deep Learning Neural Networks Optimized by Artificial Bee Colony Algorithm M. Yuvaraju, K. Lekha, B. Shuriya	285
44	Line-Following Auto Cart for Customizable Transportation Jaikaruna S, Anitha. T, K. Srinivasan, Iswarya. M, Mirrunalini P. S	293

45	PowerReserve: Enhancing EV Charging Accessibility through Intelligent Slot Management Sanjay V, Sakthivel K, Vimal Raj T, Palanisamy K	299
46	Performance Evaluation of PLA-SVM based Predictive Maintenance Systems Shital Solanki, Ramesh T. Prajapati, Dipesh Makwana	304
47	Dynamic Wireless Power Transfer System Jagadeesh Kumar M, Arasi L T, Deepikha S R, Shreyas D	310
48	Design of IoT based Micro Algae Cultivation & Monitoring System K. Jyostna, Y. Vishwapriya Reddy, P. Hanish Goud, Sai Praneeth Vasa	316
49	A Novel Method for Brain Control Interface Wheelchair Implementation Yash Dale, Nanduri Kowshik Anirvan, Suhas S Karjigi, Sameena H. S	324
50	A Low-Power Neural Translation Accelerator: Hardware Architecture Design on Heterogeneous Computing Platforms Liang Yingping, Han Xiaoyun, Lv Chengyue, Liu Yishan	330
51	Towards Sustainable and Responsible Information Systems: Privacy and Security in the AI Era Yi-Shuai Xu, A. M. K. Yanti Idaya, M. S. S. Kassim	337
52	Interpretable Machine Learning Framework for Sustainable Solar Power Systems C. N. S. Vinoth Kumar, G. Arutperumjothi, A. Saranya, J. Jeyavel	345
53	FPGA-based Embedded Sensor Architecture for High-Speed Data Acquisition Systems Jami Venkata Suman, Omprakash Gurrapu, A. Ananthi Christy, Aenikapati Swetha Priya, Mirjalol Ismoilov Ruziboy Ugli, Sardor Sabirov	353
54	Dual Renewable Energy System: Solar and Peltier-based Battery Charging D. Nagarajan, M. Devika, Rashid, Gowtham J, Muhammed Shiyas P	359
55	IoT-Enabled Smart Water Management System using ESP32 and RFID for Urban Applications G Jeyalakshmi, Durga devi M, Iniyasree B, G. Manonmani, Mounica S, Vanathi K V	364
56	Intelligent Public Sanitation: An IoT-based System for Environmental Sensing and Predictive Cleaning R. Kiruthika, A. N Duraiavel, S. Jeyabharathi, Baskar J, Sujith R, Sakthi mahandran J S	370
57	IoT-based Real-Time Earthquake Disaster Management and Public Safety System with Predictive Analytics and UAV Assessment K. Kalaivani, S. M. Deepa, Srinivasan B, Arunkumar A, Vignesh J, Prabakar B K	378
58	A Novel D-Shaped Star-Slotted Antenna with Defective Ground Structure for 5G Applications G Vijayakumari, T. Annalakshmi	385
59	An AI-IoT Integrated Smart House Automation using Proximal Policy Optimization Abinaya. M, Ashwini. T. B, Charithra. P, Jency Ruba. S, Maheswari. A	392
60	Motion+: Robust 3D Motion Tracking using Depth Estimation in a Single Camera Setup Jayveer Kochhar, Reetu Jain	404
61	Enhancing Wind Power Efficiency through Smart Generation and Real-Time Voltage Monitoring Balraj B, Archana S, Muhamed fayaz F, Sajudheen Y	415

62	Design and Development of a Solar-Driven Grass Cutting System with Lawn Coverage Satheesh R, Arjun Kumar, Bikki Kumar	422
63	Energy Flow Management using Bidirectional Buck-Boost Converters for SoC-based G2V/V2G Operations in Electric Vehicles Balraj B, Midhun K	427
64	Model Predictive Control based Modeling for Magnetic Resonance Guided High-Intensity Focused Ultrasound Treatment Priscilla Whittin, Jeba Singh O, S. Jebarose Juliyana, K. Anish Pon Yamini, Akey Sungheetha	433
65	FOPID-Controlled UPQC & IUPQC for Power Quality Improvement in Wind Energy Systems G. Pandu Ranga Reddy, N. Praveen Kumar Reddy, R. Abhishek, Shaik Harif	444
66	Levenberg Marquardt Algorithm based Process Optimization of Jatropha Biodiesel in Bioenergy Systems M. Muthukumaresan, D. Hariharan, N. D. Raja, Sivanandha Saraswathy, Srikanth Karumuri, Suresh Seetharaman	450
67	A Comprehensive Survey on Energy-Efficient and Environmentally Sustainable AI Models Shilpa Sharma, Jasdeep Malhotra, Hitakshi	456
68	ANOVA-Optimized SVM for Power Disturbance Detection Mohd Saiful Najib b. Ismail @ Marzuki, Ahmad Farid Abidin, Mohd Zamri Jusoh, Dalina Johari, Kamarulazhar Daud	461
69	Integrated Modeling and Control of an 8/6 SRM Drive using ANSYS and MATLAB Co-Simulation Vidhya H, Adharsh R, Dheeraj M, Akash B	466
70	Performance Analysis of Sodium-Ion Batteries using PyBamm T. Athul, Roji S Marjorie	474
71	Dynamic UAV Electronic Warfare Strategy Optimization using Meta-Policy Deep Reinforcement Learning Teng Tian, Yuanshuo Bai, Yaosen Yang, Da Sun	480
72	Building Energy Consumption Forecasting and Optimization using LSTM-Enhanced Gradient Descent Algorithms Cao Xuefei	486
73	A Sustainable Aerial Photogrammetry System for Cultural Landscape Modeling using Enhanced Multi-View Stereo Shuaishuai Hao, Hongbo Zhang	493
74	Maximum Efficiency and Power Point Tracking System for LCC-LCC Compensated Wireless Power Transfer System for EV Applications Pabba Ramesh, R. K. Pongiannan, Narayanamoorthi R	499
75	Comparison of Battery Management System using Kalman Filter and Extended Kalman Filter Techniques Sudharshana, Subramanya Bhat	506
76	A Concealable, Hands-Free Automotive Vehicle R. R. Sushmitha, R. Yogha Balaj, J. Subiksha, G. Elavel Visuvanathan, Harisudha Kuresan	510
77	Edge-based Secure Authentication and Anomaly Detection Framework for Wearable IoT in Healthcare Systems Hari Kiran Vege, Dinesh Kumar Anguraj, K Padmanaban	518
78	Hybrid Recognition Algorithm for Sustainable Garden Monitoring based on Multi-Sensor Data Integration and Context-Aware Learning Jing Huang	524

79	WSN and UAV-Assisted Aircraft Structural Health Monitoring During Maintenance Prashanth Kotur, Surendran R	531
80	Comparison of the Effectiveness of Different Optimizers with Deep Learning Algorithms for the Prediction of Heart Disease M. Malini, R. Devi	538
81	Framework for Detecting Suspicious Vehicles Movements using Machine Learning Techniques Bunga Jyothi, B. S. Vara Prasad, Nethala Tulasi, P. Srinivasulu, Gudisa Swapna, Bonthu Sri Lakshmi	547
82	Role of AI Technique for Controlling Micro Plastic on Marine Eco System Rafiq Shaik, Princy Suganthi Bai S	553
83	Predictive Modeling of Eco-Friendly Logistics using Random Forest Asis Kumar Bhunia, Subir Gupta, Aparna Bhaduri, Subrata Chowdhury, Tran Duc Tan, Nguyen Thi Thu	559
84	IoMT-Driven Ensemble Learning Framework for Cardiovascular Disease Prediction Sathya Balaji, S. Kalarani	566
85	Implementing Deep Learning Algorithms for Solving Security Issues and Challenges in the IoT Network T. Dhivya, R. Arun Prakash	571
86	Enhancing Traffic Sustainability via Deep Learning and Multi-Source Data Fusion in Smart Transportation Networks Haotian Wang	579
87	Intelligent Driving Risk Analysis using Real-Time Transformer-GRU-BiLSTM Network for Vehicle Detection Sana Afreen, Mohammed Ali Shaik	586
88	Time-Series Forecasting of Solar Power Generation using RNN and IoT Data K. Thinakaran, B. Bharathi, K. Sangeetha, R. Anitha, R. Vinodha, B Meenakshi	591
89	Diffusion Model-based Algorithm for High-Quality Image Generation and Quality Optimization in Brand Visual Communication Shang Yan	597
90	Real-Time Motor and Pipeline Monitoring with Soil Health Analytics for Agriculture D. Devasena, K. Deepa, Y. Dharshan, P N Ragadarsini, S Manojkumar, S Inbakumar	604
91	Fertilizer and Crop Recommendation using Multi-Model Stacked Learning with Explainable AI for Sustainable Farming Dipali Sinha, M S Jaisree, M Kaviya, B Swathi Lakshmi	610
92	Precision Aqua-Farming: Anticipating Fluctuating Weights of Livestock in Aquaculture using Machine Learning and IoT Nabanita Choudhury, S. Adinaarayana, S. Hrushikesava raju, Vijaya Chandra Jadala, U. Sesadri, Viswanathan Ramasamy	619
93	Defect Detection in the Textiles Industry using a Multi-Task Transfer Learning Approach U. Sesadri, Nabanita Choudhury, S. Hrushikesava raju, Vijaya Chandra Jadala, S. Adinaarayana, Viswanathan Ramasamy	627
94	YOLOv5-based Parking Space Detection for Reducing Urban Congestion and Fuel Wastage Sarithala Shareef, Radhika Baskar, T. Kavitha, M. Kasiselvanathan, Mohana Priya P, T. R. GaneshBabu	635

95	IoT based Wireless Charging Technology for Hybrid Electric Vehicle Suresh P, Murthy S. E, Kathiresan R, Kamatchi Kannan V, Rekha P, Dhinesh B	641
96	Prediction of PV Power using Ensemble Learning Techniques with Meteorological Data Alagar Karthick, Karamala Naveen, Seeniappan Kaliappan, V Thirumani Thangam	646
97	Improvisation of Dam Control using Sensor based IoT Prajeesh S, Samsudeen M, Mouriyamadhavan SB, T. Bharani Prakash	651
98	iTransformer-based Blockchain Supply Chain Anomaly Detection and Forecasting System Kai Kang, Bolin Huang, Qianying Liu	660
99	A Transformer-based Framework for Explainable Electricity Market Dynamics Kai Kang, Qin Wang	665
100	A Novel Protocol for Secure Communication Between a UAV and Ground Control Station Ankush Soni, Sanjay K Sahay	670
101	Techno-Economic Design of a Renewable-Rich Microgrid for Remote Communities Md. Ripon Ali, Md. Feroz Ali, Diganto Biswas, Md. Esmay Azam	678
102	IoT-based Physiotherapy Device for Quantifying Hand Condition Zara Namjoshi, Vinay Vishwakarma	685
103	Technological Advancements in Aquaculture and Water Management using Artificial Intelligence and Internet of Things G. Navamani, N. Sumathi	692
104	Random Forest Regression for Solar Radiation Forecasting with Meteorological Inputs Alagar Karthick, Ravuri Yamuna, Seeniappan Kaliappan, R. Anitha	696
105	Time-Series Forecasting of Energy Consumption with LSTM Algorithm Soumiya S, Vichu b, Vineeth K V, Vishnu I V, Sanjai M	701
106	Dual-branch GAN-Driven Super-Resolution for Low-Dose CT Image Enhancement Under Radiological Noise Constraints Judy Simon, Nellore Kapileswar	710
107	DeepCurrent: An Attention-Driven Graph Neural Network for Energy-Efficient Routing and Data Aggregation in UIoT Networks Nellore Kapileswar, Judy Simon	716
108	Quantum-Secure Edge Computing for Internet of Things: A Cryptographic Framework K. Kavitha devi, Debojeet Kohar, S. Jeeva Mithran, Apurva Kaushik, Dishant Kaushik, Josen raja	721
109	Parametric Analysis of the Nature-Inspired Algorithms based on VANETs Ashokkumar Munira, S. Kiruthika, A Balasupramani, T. Siva Kumar, P. Vijayakumar, D. Sharmiladevi	726
110	SecureChainNet: A Dual-Stage CNN-LSTM Model for Real-Time Transaction Fraud Detection in Cryptocurrency Networks B. Padmavathi, Prabhu Ramanathan	734
111	Underwater IoT Intrusion Classification Model using Novel Deep Learning-based Optimization Methodology S. Arivumani Samson, M. Nagarajan	743
112	A Graph Neural and BiLSTM Hybrid Network for Transactional Fraud Detection in Digital Payment Gateways Judy Simon, Nellore Kapileswar	752

113	IoT-Enabled Diagnostic Model using Deep Learning for Early Detection of Parkinson's Disease from Gait and Brain Imaging Nellore Kapileswar, Judy Simon	758
114	Evaluation of the IoT-based Device for Strengthening the Pelvic Muscle Shloka Mehta, Hitendra Vaishnav	764
115	Adaptive Dark Channel Prior for Underwater Image Dehazing based on Haze Level and Resolution Kayalvizhi S, Kanthalakshmi S	773
116	An Enhanced Genetic Algorithm-based IDS to Secure Smart Meter Communication P Ganesh Kumar, R Vijayanand, M Ulaganathan, D Devaraj, S. S. Sivaraju	780
117	Benchmarking Hybrid CNN-BiRNN Video Summarization Against Traditional Methods for Optimal Streaming Asha Prashant Sathe, P. Jeyanthi	786
118	Library Resource Retrieval Via Joint Feature Embedding and Cross-Modal Hashing Optimization Algorithms Jinjun Li	793
119	Optimizing Autonomous Vehicle Navigation using Deep Reinforcement Learning and Generative AI Models: An Empirical Study Deepak Dasaratha Rao, Garidepalli Laxmanarao, Yugandhar Suthari, Karthik Babu Manam, Santosh Kumar Kallepalli, Siva Koteswara Rao Katta	800
120	Agricultural Robot: Enhancing Farming Efficiency Through IoT and AI/ML Sagnik Mazumdar, Tiyaasha Mondal, Tanishq Bhattacharjee, Tushar Kanti Bera, Umesh Pal, Arindam Giri	806
121	Li-Fi Technology: Architectures and Data Transmission Mechanisms Mehman Hasanov, Khagani Abdullayev, Shadiya Sultanova, Rasul Qojayev, Emin Payizov	812
122	Hybrid Phishing Detection Framework using Green AI: An Energy-Efficient and Explainable Browser-based Approach Manswini D C, K. Sangeetha, G. Swathi, M. Shobana, S. Priyadarsini, Karuppasamy P	818
123	IoT Enable Real Time Framework for Benzene Monitoring and Analysis Shishir A. Bagal, Nitin K. Choudhari, A. R. Chaudhari	825
124	IoT-based Smart Solar Street Lighting System with Adaptive Brightness Control for Seasonal and Ambient Light Optimization P. Rajesh Kannan, M. Vikram, P. Ganga, Vignesh Lingam. R	835
125	Towards Smarter 5G: An AI-based System for Predictive Traffic and Resources Management Puli Madhusudhan Reddy, C. Balakamatchi	842
126	Design and Development of a Smart Internet of Things (IoT)-based Monitoring System for Real-Time Health and Performance Tracking of Knee Implants Geethapriya N, Ishwarya Niranjana, Rithish M, Kesavan A, Kamalesh A, Parath Kumar K	847
127	An Integrated IoT Architecture for Real-Time Detection and Remote Tracking of Dementia Symptoms D. Shamia, V. V. Teresa, Harish Ragavendra M, Kaviarasu P, Akash R, Simiyon A	854
128	Techno-Economic Evaluation of a Hydrogen-Integrated Hybrid Renewable Microgrid for Rural Electrification	860

	Md. Feroz Ali, Md. Esmay Azam, Diganto Biswas, Nobonita Sarkar, Md Abdur Razzak	
129	Indoor AR Navigation for Library Application Deepika K M, Sushma Hegde, V Namratha	866
130	Integrating AI and Circular Economy Principles for Sustainable Electric Vehicle Battery Management Priya Dongare-Jadhav, Suhas Deshmukh	871
131	ToxiScan: AI-Powered Hazardous Food Ingredient Detection System Rakshit Kapoor, Amey Chavan	880
132	Real-Time Object Identification and Assistance using Deep Learning for the Blind S Sandhya, S Sakthi Vinayagam, B Sujitha, D Thirisha, S Thirumoorthi, B Praveen Kumar	889
133	Diagnosis of Chest CT Scan Images using Proposed CNN, ResNet101 and VGG19 Deep Learning Models Suman Chowdhury, Dilip Kumar Das	896
134	Artificial Intelligence-Enabled Energy Management: A Mixed-Methods Evaluation of Performance K Natarajan, Sathishkumar R, Deepamangai P, Venkateswaran M, Praveen Kumar Yadav K, Sivaraju. S. S	903
135	Generative Adversarial Network-based Modeling of Stress and Strain in Hierarchical Composite Materials Preety Singh, Soppari Bhanu Murthy, Shaziya Islam, Anandakumar Haldorai, Sachin Chandravadan Karad, Karthikayen A	910
136	Hotspots to Handcuffs: A Data-Backed Strategy for Safer Cities K. Dora Babu, T. Aditya Sai Srinivas, R. Varaprasad, M. Ramu, A. David Donald, A. Sai Rekha	916
137	Intelligent Edge Computing for Real-Time Patient Health Monitoring using Adaptive CNN-LSTM Ranjani R, Naresh R	925
138	Performance Analysis of Time Splitting Protocol in Multi-Femtocell Energy Harvesting Networks Gurmeet Kaur, Supreet Singh	931
139	Aco Optimized Routing for Energy Efficient WSNs with Node Coverage D Harika, Kukati Pujitha, K Ashok, K Chaitanya Kumar, Munna Naveen	937
140	Sustainable AI for Medical Imaging: A Federated, Edge-based Approach to Chest X-ray Triage Radhika Ranganathan, Adaikkammai Annamalai, Shobana Ruban, S. Mythili, B. Shuriya, V. Balajishanmugam	945
141	Analytical Comparison and Detection of Insecticide Residues in Fruits Jubaira Mammoo, P. Malin Bruntha	953
142	Sustainable Vision System for Age Estimation Under Occlusion via Generative Feature Recovery and Deep Learning Yu Gao	959
143	Intelligence Entity Relationship Mining Algorithm Integrating Knowledge Graph and Deep Learning Cheng Miao, Teng Tian, Yuanshuo Bai, Peili Hao	965
144	Adaptive Auto-Scaling of Distributed Databases on Cloud Platforms via Reinforcement Learning-based Resource Optimization Yuan Zheng, Yao Jiaqing	971
145	Visual Simulation of IoT-based Smart Cities Inclining Towards the Attainment of Sustainable Development Goals R. Priyakanth, N. M. Sai Krishna, P. Rajesh Kumar, M. Nithya Sindhuri, D. Tejoprayuktha, B. Deekshitha	978

146	Deep Fuzzy Convolutional Neural Network for Predicting Intrusions in Wireless Sensor Network Nithya B, Veeralagan J, Anoop Mohanakumar	983
147	Towards Sustainable and Transparent Solar Energy Systems using Explainable AI R. V. Deepikaa Shri, N. Aravindh Babu, R. Kishore Kanna, S. Palanikumar, S. Sathea Sree, S. S. Diwakar	989
148	IoT-Enabled Sustainable Deep Learning Framework for Multi-Class Ophthalmic Disease Detection using Fundus Images S. Suganya, K. Vishnupriya, M. Nandhini, B. Sharmila, S. Vigneshwaran, S. Babu	997
149	Python-based OMR Sheet Recognition and Evaluation Palak, Mohit, Nikhil sharma, Bhushan, Sanjyoti Jain	1005
150	Quantum Computing for Sustainable Energy: Optimising SDG-7 Through Smart Energy Management and Financial Planning Savita Kumari Sheoran, Vikesh Yadav, Rakesh Kumar Sheoran	1012
151	Deep Learning for Dementia Detection using Non-Invasive Data and Genetic Risk Karthik Prakash, Divyanshu Raj, Sneha Deb Barman, Yashmit Sharma, Minal Moharir	1021
152	AI-Powered Fire Detection and Response System using Image Processing and Sensor Networks S Sakthi Vinayagam, S Sandhya, M P Devika, P Manisha Nasreen, K S Dilna, Julipi Divya Sree	1029
153	Data-Driven Decision-Making for Sustainable Infrastructure: A Comprehensive Review Dayanand Ambawade, Abhijit Iyer, Anisha Shankar	1034
154	Federated Deep Learning for Sustainable Systems: A Privacy-Preserving and Scalable Big Data Analytics Framework Yuan Zheng; Fu Xiaoyu	1041
155	Sustainable Medical Diagnostics: An Energy-Efficient Hybrid Attention Network for Goblet Cell Adenocarcinoma Identification Shaofeng Guo	1049
156	Sustainable Urban Mobility: Real-Time Congestion-Aware Traffic Signal Optimization via Deep Q-Networks Haotian Wang	1055
157	Music Melody Generation and Style Transfer Combining Deep Reinforcement Learning and Variational Autoencoder Dong Pei	1063
158	Sustainable 2D-to-3D Animation Synthesis via Skeleton-Guided and Shape-Mapped Algorithms Xu Yaoyao	1069
159	Data-Enabled Sustainable Safety Solutions: Hybrid Algorithm for Risk Forecasting in Grain Industry Ecosystems Yimeng Li, Sen Peng, Wenfei Zeng, Xuemei Ren	1075
160	Enhancing Industrial IoT Security with AI and Cloud Computing: A Review of Threats and Solutions S. Saravana kumar, Balaji Kannan	1082
161	Enhanced Sustainability in Green Vehicular Networks Through Energy-Aware Resource Management and Collaborative Computing K. Jyostna, Gattu Srikar Sharma	1090
162	Analyzing Quantization in Multilingual Transformer Models for Indic Translation Praneeth Kasiraju, Abhinav Kumar, Ramprasath M, Manikandan N	1098

163	A Comprehensive Review of IoT Network Security using Machine Learning Techniques Pooja K. Shah, Amita. V. Shah, Hetal B. Pandya	1105
164	5G Technology: A Dynamic Step-Wise Blowfish Encryption Algorithm with Fruit Fly Optimization to Improve Quality of Service in the Healthcare Industry B. Arivazhagan, M. Inbavel, S. Nivas, R. Subha	1112
165	A Next-Generation Decentralized Web Hosting System using Blockchain and IPFS S. Parvathi, Pallapati Solmon, S. Sree Hari Raju, Yacharam Uma, S. Srinivas, P. Shanker	1122
166	IoT and Inception V3 for Precision Rice Disease Detection A. Sriram, B. Ramasubramanian, G. Parameswaran, M. Krishnarani, E. Raja, S. Sundaresan	1129
167	Enhanced Wildlife Species Classification using YOLOv10-x for Sustainable Management Decisions Abinaya. M, Sathya Narayanan. K. R, Selvaganapathy. D, Roshan. S	1135
168	A Dynamic Traffic Engineering Strategy using Latency-Aware Congestion Control in Software-Defined Networks S. D Vijayakumar, M. Arun, T. Sanmathi, T. Rajkumar, M. Prakash, S. Jayabratha	1148
169	Weight Optimised Deep Neural Network based IDs Classification System Jeyakumar V, Karthik R	1157
170	Improving Retrieval-Augmented Generation for Low-Resource Languages Jasdeep Malhotra, Shilpa Sharma, Akashdeep Singh Rana	1164
171	Evolution of Deep Learning Approaches in Crop Disease Detection: A Review Nisha Rani, Sunil Kumar	1170
172	Harnessing the Internet of Things for Sustainable Urbanization: A Framework for Resilient Smart Cities K. Balaji, P. Seshagiri Rao	1176
173	Neural Networks Beneath the Waves: A Review of Machine Learning in SST Forecasting Anjali T, Eldho KJ	1182
174	Comparative Machine Learning Framework for Rainfall Forecasting and Agricultural Loss Estimation Hasan Ahamed Alif, Md. Jisan Mashrafi, Minhaj Uddin, Jawad Ahmed, Fahim Faiyaz, Sebatat Selim	1187
175	Hybrid Lane Detection and Turn Prediction Framework using U-Net-based Lane Marking Visibility and Geometric Curve Analysis Lakshmi Narayana, T. M. N Vamsi	1194
176	Transformer-based and Deep Ensemble Learning Models for Improved Web Text Categorization Saraswati Bhakare, Meghana N, Machanuru Suresh Babu, C Maddilety, Pilli Suneetha, Vijaya Raju Madri	1201
177	Hybrid Kalman Filtering and Deep Neural Sequences for Robust Motor Fault Identifications Na Liang	1205
178	Skinsense: Feature-Aware Deep Learning for Dermatological Diagnosis Pearl Ann Palathinkal, Santhos Kumar S, Kumaran K, Saranya G, R Srivats	1211

179	Integrating ResNet50v2 and MobileNetv2 Models for Meningioma Detection Femila Irene G, Surendran R	1218
180	Sensor Data Modelling for Anomaly Detection in Aquatic Environments Rahul S G, Kalpana Devi P, N Kirn Kumar, Priscilla Dinkar Moyya, T M Amirthalakshmi, Avinaash Arjun V	1224
181	AeroSense-Ensemble: An IoT-Driven Deep Learning Framework for Accurate Air Quality Prediction and Analysis M. Banupriya, R. Arun Prakash, S. Ravimaran, Balambiga. G	1230
182	Optimizing a Deep Learning Model to Develop a Threshold based Framework for Threat Detection Vijaya Ramineni, Prakash Kuppuswamy, Lavanya Sudula, Saeed QY Al Khalidi, Mounika Samudrapu, Ramamohan Rao Gudaruru	1238
183	Intelligent Alzheimer's Disease Identification using Hybrid Inception V3 with MLP Models Malathi Rani D, Arun Sekar Rajasekaran, Ramkumar N, Kiran Kumar G, Panduranga Vital Terlapu	1246
184	IoT-Driven Smart Forest Fire Detection and Prediction System with AI-based Risk Mitigation A Sivanesan, A Ajeeth, J Abhijith, Aswin George, M Bhavish, P V Thanush	1254
185	Air Pollution Forecasting with Machine Learning: A Step Toward Proactive Environmental Management V Jethose, A R Venodhani, P Balaji, A Suji Priya, K Chaturveda Sree, T Gowarthanan	1264
186	Detection and Prevention of Cell Congestion in LTE Networks using Machine Learning Techniques S. Nithyaselvakumari, Mohammad Abu Kausar, M. Vishnuvardhan Reddy, Kamalakar Ramineni, M. S. Nidhya, Balajee Maram	1271