

2025 IEEE 2nd International Conference on Green Industrial Electronics and Sustainable Technologies (GUEST 2025)

**Jamshedpur, India
11-13 October 2025**

Pages 1–578

IEEE Catalog Number: CFP25VL3-POD
ISBN: 979-8-3315-7437-6



Copyright © 2025, IEEE

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:	CFP25VL3-POD
ISBN (Print-On-Demand):	979-8-3315-7437-6
ISBN (Online):	979-8-3315-7436-9

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

TABLE OF CONTENTS

Hypothesis-Driven Design of a Neuro-Controlled Embedded Inflatable Penile Implant System for Gender-Affirming and Erectile Dysfunction Treatment	1
<i>Akash V. Katode</i>	
Energy-Efficient Ubiquitous Sensor Collaboration System Enhancing Real-Time Decision Making in IoT Ecosystems	9
<i>Biru Rajak, Salman Alsaman, Maksudjon Usmonov, Rohit Markan, G Sajiv, M Ponni Valavan</i>	
Improved Plant Disease Recognition Using MobileNet and Regularization Techniques	14
<i>Deepika Kumar, Puneet Kumar, Nitika Bansal, Khushbu</i>	
Attention-Augmented MobileNetV2 for Early Detection of Alzheimer's Disease in Brain MRI	20
<i>Puneet Kumar, Deepika Kumar, Neha Chhabra</i>	
Advancing Electric Vehicle Efficiency Forecasting: Nonlinear Battery Frameworks and Empirical City Driving Profiles	26
<i>Utkarsh Alset, Datta Chavan, Ashwini Pawar, Panchshila Pillewar, Snehal Andhale</i>	
Load Forecasting Strategies in Smart Home using Functional Link Neural Network	32
<i>Deepa Das, Rajendra Kumar Khadanga, Deepak Kumar Rout</i>	
Autonomous Vehicle For A Smart And Safer Mobility	37
<i>K Uma Rani, M U Anusha, Y P Tharun Gowda, K G Manu, P Kushal, Maanya S Rao</i>	
Investigating the Behavior of Classical Pseudorandom Number Generators on the qBraid Quantum Platform	43
<i>Madhav Verma, Areeba Khan, Sumitra, Richa Kumari, Keshav Sinha</i>	
Secure Anomaly Detection in Distributed Network using Federated Learning	51
<i>Areeba Khan, Richa Kumari, Sumitra, Madhav Verma, Keshav Sinha</i>	
AI in Brain-Computer Interfaces: Advancing Adaptive Neurotechnologies for Cognitive Augmentation and Neural Rehabilitation	58
<i>Avinash Bhagat, Rohit Kumar, Pushpendra Kumar Sikarwal, Swarn Singh, Omkar Singh, Mukesh Kumar</i>	
State-of-the-Art Antenna Innovations for Effective RF Energy Harvesting-A Review	64
<i>Pandit T. Yewale, Abhay N. Gaikwad</i>	
Artificial Intelligence,Data Privacy and Ethical Integrity in Healthcare sector: Comparing the Regulatory framework between India & UK	69
<i>Ananya Sutradhar Pal, Neha Jaiswal, Akanksha Shukla, Subhabrata Pal</i>	
Optimum PMU Placement under Data Integrity Attacks using Binary Polar Bear Optimizer Algorithm	75
<i>Sruthi Ankam, Vedik Basetti, Sachidananda Sen</i>	
Performance Analysis and Fabrication of a Flexible Piezoresistive Strain Sensor by utilizing CNT-Based Nanocomposites	81
<i>Hema P, Anubhav Kumar Pandey, K. K. Nandini, Sujit Kumar</i>	
An Efficient IoT Security Prediction Framework	85
<i>Priyanshu Sinha, Shiv Prakash, Sudhanshu Kumar Jha, Tarun Kumar Gupta, Rajkumar Singh Rathore</i>	
<i>Sohan Kumar Yadav</i>	

Employing random forest regression and oceanic factors to predict the occurrence of marine heatwaves	90
<i>S. Arockia Jayadhas</i>	
Power Quality Enhancement of Hybrid PV-Wind-Battery-FCS-AE Based Standalone Microgrid under the Operation with Various Loads	95
<i>Karanam Deepak, Ajesh, Muhammad Hammad Saeed, Ch. Srinivasa Rao, Ankita Nainwal, T. Saravanan N. Srinivas, Kandi Bhanu Prakash</i>	
Data Driven Protection Strategy For AC Microgrid Using Bidirectional LSTM Networks	101
<i>Shreya Rana, Jay Atal, Tapaswini Biswal, Sanhita Mishra</i>	
High-Performance CIGS Thin-Film Solar Cells for Emerging Photovoltaic Applications	107
<i>Pratik De Sarkar, Debashis De, K. K. Ghosh</i>	
Development of a Disease Diagnosis Chatbot using Machine Learning Techniques	111
<i>Sushreeta Tripathy, U.M. Mohapatra, Shreeya Sruti Ojha</i>	
CloudInfraBot: Reinforcement Learning-Driven Infrastructure Automation for Azure-Based MLOps Environments	117
<i>Radhakrishnan Krishna Kripa</i>	
An Overview of Advanced Protection Schemes for Grid-Connected DFIG-Based Wind-Driven Systems	123
<i>Abhishek Kumar Sinha, Pritam Kumar Nirala, Ravi Bhushan, Santosh Kumar Verma, Ravi Raushan</i>	
Profitability Driven Solar Array Sizing for Grid Independent EV Charging during Daylight Hours	129
<i>Tanishq Manshani, Tirthadip Ghose</i>	
Artificial Intelligence Assisted Optimization Control of DAB Converter in MPPT-Based Off-Grid Solar EV Charging Station	135
<i>Subhabrata Pal, Avik Bhattacharya</i>	
A Hybrid Artificial Intelligence Model for Fault Detection and Predictive Maintenance in Power Grids	141
<i>Attar Suhaib, G. Jawahar Sagar, Puli Tarun, Thatiparthi Arun, Satish Koda, Tarkeshwar Mahto</i>	
A New PI and PID Controllers Using CCDDCCTA	147
<i>Yumnam Shantikumar Singh, Pheiroijam Robin Luwang, Kiyam Babaloo Singh, Vivek Bhatt, Ashish Ranjan Sharmila Meinam</i>	
Adaptive neuro-fuzzy inference approach for Arc Detection in pantograph–catenary system	152
<i>Rohini Sharma</i>	
Zero Trust Edge: An Explainable AI-Driven Energy- Aware IIoT Framework with Zero Trust Security for Sustainable Smart Grid	158
<i>Asthaa Jain, Arsalan Ahmed Alya, Er. Jai Parkash, Parveen Kaur, Aashdeep Singh, Kamal</i>	
Advancing Vehicle Dynamics Testing using A CAPL and Panel Designer Approach in CANoe Environment	164
<i>Aliya Rahman, Jayendra Kumar, Ayush Kumar Agrawal, Avanish Kumar, Pratul Arvind</i>	
Towards Robust and Efficient MRI Reconstruction Using DL: A Step Toward Cyber-Physical Medical Imaging	170
<i>Ajit Kumar, Jayendra Kumar, Ayush Kumar Agrawal</i>	

Modelling of Interior Permanent Magnet Synchronous Machine using Python Optimized Parameters in ANSYS for EV Applications	177
<i>Bhupendra Kumar Sahu, K. Chandrasekaran</i>	
Machine Learning-Driven Forecasting for PUC5-Optimized EV Charging Demand	183
<i>Bikash Chandra Saha, Shweta Sonali Dhal, Naiyer Mumtaz, Kumar Nilesh, Aditiya Kumar Ahmad Mayur Khan</i>	
Optimizing Smart Charging Infrastructure Through Queue Modeling for Sustainable E-Mobility Management	189
<i>K. Kavitha, S. Maragathasundari, A. Dhanalakshmi</i>	
Federated Learning with Temporal Fusion Transformer for Interpretable SOH Prediction in EV Batteries	195
<i>Veerakotlu Lella, Ch. SharasChandra Sashank, G Jawahar Sagar, Amit Kumar Yadav Somesh Vinayak Tewari, Tarkeshwar Mahto</i>	
Evaluating Model Interpretability for Battery Health Prediction: A Multi-Metric XAI Framework	202
<i>VeeraKotlu Lella, S. Bhanu Prakesh, S. Sai Nadh Reddy, G Jawahar Sagar, Somesh Vinayak Tewari Tarkeshwar Mahto</i>	
Vision-to-Voice: Enhanced CNN-LSTM-Based Image Captioning with Assistive Text-to-Speech	208
<i>Arunya Paul, Tejaswini Kar, Sasmita Pahadsingh, Alokita Paul, Shruti</i>	
Microgrid Planning with Enhanced EV Hosting Using Marine Predators Optimization Algorithm	213
<i>Yasmeena, Shubh Lakshmi, Tarkeshwar Mahto, Somesh Vinayak Tewari, Veerakotlu Lella Bhanu Prakash Darbha</i>	
Solving Optimal Power Flow Using Enhanced Dung Beetle Optimization Algorithm	219
<i>Ravi Kumar Avvari, Lakshminarayana Gadupudi, Anil Kumar Annamraju, Nareddy Nageswara Reddy</i>	
Affordable Smart Agriculture System Using IoT and ML for Crop Health Monitoring in Resource-Constrained Environments	224
<i>C Roopa Mani, Bandi Rambabu, A Vani Vathsala, Putta Srivani, D Kalyani, P Karunakar Reddy</i>	
AI and Grey Wolf Optimization Based Enhanced Standalone Solar PV Fed BLDC Motor Driven Water Pumping System	231
<i>Ritika Arora, Sushma Kakkar</i>	
ANN Controlled PV Integrated Interleaved Buck Converter for Green Hydrogen Production Using PEM Electrolyzer	237
<i>Mohd Alam, Ram Atkar, Priyanshu Rautkar, Nikhil Ruhela, Nithilan Ramesh, M Narayana Murthy</i>	
Mmwave Path Loss Prediction using Machine Learning and Deep Learning Techniques	243
<i>Harsha Harrison, Chinnu Jacob, Blessy Babu, R Resmi</i>	
Comparative Analysis of the MPPT Techniques for Optimized Power Flow of Fuel Cell Integrated Boost Converter	249
<i>Brajesh Kumar Ravi, Rajdip Dey, Santanu Paul</i>	
Performance Analysis of PI, FLC, and ANN Controllers for PSFB DC–DC Converter	255
<i>Aji Sidharth, O Mohammed Mansoor, Sheik Mohammed Sulthan, B Sri Revathi, V Ravikumar Pandi</i>	

Novel Energy Management Approach for SPV-DGBattery based Standalone Power Supply System with FOPID Controllers	261
<i>Cholleti Harish, P. Hemeshwar Chary, Mohammed Azaharahmed, Suresh Kakinatla, Pramod Mehra K. Sarathy, Pasumarthy Nageswara Rao, Kandi Bhanu Prakash</i>	
Quantum-Augmented MobileNet for Efficient Land Classification in Satellite Imagery	268
<i>N Krishna Santosh, Mallavarapu Vivek, Katru Sri Teja, Bukka Siva Naga Kranthi Koneru Phani Brahma Adithya</i>	
Impact Assessment of Multiple PV-DG & DSTATCOM Allocation in Reconfigured RDN using a novel hybrid Approach	274
<i>Pragya Guru, Shradha Singh Parihar, Saurav Raj</i>	
Parameter Estimation in Cosmology Using MCMC: A Computational Approach with Applications to Energy Systems	280
<i>D. Revanth Kumar, Santosh Kumar Yadav</i>	
GenSQL: A Generative AI Framework for Natural Language to SQL Conversion	286
<i>Surajit Das, Swetha Gadde, M. Amarendhar Reddy, Mogulla Vijay Kumar Reddy</i>	
Multilevel Inverters for Electric Vehicle Applications: Recent Trends and Technological Advancements	294
<i>J.N. Bhanutej, P.S. Raghavendra, S. Sanjana, K.Tara Sing, M. Pranay, Sundeep Siddula Neelima Kalahasthi</i>	
Design and Implementation of TID-Based Frequency Regulation for Load-Varying Systems	300
<i>Prashanta Kumar Tripathy, Manoj Kumar Kar, Pratap Chandra Pradhan</i>	
Blockchain-Based Secure IoT Communication for Smart Manufacturing	305
<i>Ankita Tiwari, T. Saravanan, P. Shree Shrawan Kumar, A Pradeep Kumar, K. Yuvaraj, V Priyadarshini D. U. Ashurova</i>	
Quantum-Enhanced AI for Predictive Analytics in Manufacturing	311
<i>Priti Sharma, S.Senthil Kumar, Mohammed Fallah, Abdul Subhani Shaik, K. Yuvaraj, S Sandeep Kumar M.R. Galieva</i>	
Edge Computing for Real-Time Process Optimisation in Factories	318
<i>Ramya M, R. Venkatasubramanian, Sumit Ramswami Punam, M. Sirin Kumari, R. Gunasundari Karthikayen A, Saif Obayd Husayn</i>	
Design and Analysis of Cascaded H-Bridge Inverters for EV Applications	323
<i>J. N. Bhanutej, P. S. Raghavendra, S. Sanjana, K. Tara Sing, M. Pranay, Sundeep Siddula Neelima Kalahasthi</i>	
AI-Powered Collaborative Robotics for Next-Gen Industrial Automation	329
<i>M Ramya, S. Subburam, Pushplata Patel, J. Seetaram, K. Ranjith Singh, Guma Ali, Zayd Ajzan Salami</i>	
AI-Based Federated Learning for Privacy-Preserving Healthcare AI Models	335
<i>Chilukuri Bala Venkata Subbarayudu, P.B. Edwin, Ramy Read Hossain, P. Ravi Kiran, K. Ranjith Singh J Yogapriya, M.P. Elboyeva</i>	
Blockchain-Enabled Electronic Health Records for Secure Data Sharing	340
<i>Mrunal Salwadkar, R. Balamurugan, Layth Hussein Jasim, V.A. Narayana, J. Karpagam, K Sravani Sh.B. To'Rayeva</i>	

Blockchain-Based Self-Sovereign Identity for Digital Security	345
<i>Namrata Mishra, P. K. Chidambaram, Hassan Mohamed Mahdi, A. Spandana, J. Karpagam, P. Neelima O. Sh. Gulyamova</i>	
A3TH: An Adaptive AI-Driven Autonomous Threat Hunting Framework for Proactive Cyber Defense in Evolving Digital Environments	350
<i>Nisha Milind Shrirao, R. Ahila, Haider Mohammed Alabdeli, Vivekananad Aelgani, T. Mohanraj Thella Preethi Priyanka, U.A. Hamdamov</i>	
Adaptive Lightweight Blockchain Framework for IoT Communication (ALB-IoT)	355
<i>Shital Kewte, K. Kumararaja, Muntadher MuhssanAlmusawi, B. Gayathri, T. Mohanraj, Priyanka I.A. Ismoilov</i>	
AZTEM: A Self-Evolving Zero-Trust Model for Adaptive Cloud Security Using AI-Driven Threat Mitigation and Quantum-Resilient Encryption	360
<i>Ikhar Avinash Khemraj, A. Buckshumiyani, Zayd Balassem, A. Shekar, B. Arunkumar, Guma Ali Nurboy Jabborov</i>	
Deep Learning-Based Discovery of Sustainable Construction Materials for Enhanced Performance and Environmental Impact Reduction	366
<i>Gaurav Tamrakar, N.Kalyana Sundaram, Hassan Mohamed, Harsha Gangavane, K.S. Bhuvaneshwari K V S S R Murthy, Gulnoza Jurayeva</i>	
Quantum-Powered Plasma Propulsion: A Sustainable Leap for Deep Space Exploration	372
<i>Shailesh Singh Thakur, R. Ahila, Haider Mohammed Abbas, A. Moulika, K.S. Bhuvaneshwari, R. Jayanthi Uzok Jurakulov Tashkent</i>	
Self-Sustaining Space Habitat Using AI-Optimised Bioengineered Ecosystems	378
<i>Naveen Singh Rana, S. Kanmani Jebaseeli, Muhamed Ehssan, Obu Venkatesh Yada, G. Premananthan G Uganya, M. Saparniyazova</i>	
Solar-Responsive Transparent Concrete for ZeroEnergy Buildings	385
<i>Ranjit Sandilya, S Sivasubramanian, Muntather M. Hassan, Rajshree Landage, G. Premananthan Mnssvkr Gupta, Kh. Kadirova</i>	
HydroVortex: Micro-Turbine Networks for Urban Wastewater Energy Recovery	390
<i>Nitin Ranjan Rai, G.B. Santhi, Mohammed H. Fallah, M. Naresh, R. Sundar, Priyanka, M. Sabirova</i>	
AeroHarvest: Atmospheric Carbon-Driven Biofuel Production Using Algae-Based Systems	396
<i>Nitin Ranjan Rai, G.B. Santhi, Mohammed H. Fallah, M. Naresh, R. Sundar, Priyanka, M. Sabirova</i>	
ThermoSkin: Self-Regulating Thermal Energy Harvesting in Wearable and Building Applications	400
<i>Lalit Sachdeva, V. Mangaiyarkarasi, Haideer M. Alabdeli, S. Sangeetha, A Pushpalatha, Priyanka Saodat Kambarova</i>	
Smart Driver Assistance System Using AI	404
<i>P A Abirajah, A Sam Good Win, A. Praisys Evangelin</i>	
Modelling and Analysis of a PMDC Motor Driven Electric Vehicle in Matlab/Simulink	410
<i>Alok Kumar Mohanty</i>	
Detection and Localization of False Data Injection Attacks in Power Systems Using Kalman Filter and Lasso Minimization	416
<i>Sruthi Ankam, Vedit Basetti, Sachidananda Sen</i>	

A Hybrid Qualitative-Quantitative Evaluation and Ranking of Hydro Power Plant Sites using the BHARAT MCDM Approach	421
<i>Sonimla L. Ningshen, Themmi Ragui, Hormi Kashung, Benjamin A Shimray</i>	
Physics-Integrated Hybrid Modelling of GaN HEMTs Using PFNN and RLC-Based Circuit CoSimulation for Accurate Switching Dynamics	427
<i>Vikram Kumar Saxena, Kundan Kumar, Benjamin A Shimray</i>	
Comparative Sentiment Analysis based on Mobile Phone Reviews	433
<i>Chandra Gupta Maurya, Sudhanshu Kumar Jha</i>	
AI-Driven Short-Term Solar PV Forecasting for Smart Agricultural Irrigation Systems Using a Novel Hybrid Machine Learning Model	439
<i>Sarat Piridi, Satyanarayana Asundi, Nataraja Kumar Koduri, Subhendu Sekhar Sahoo, Ankit Garg</i>	
Quantum enabled GRU Model for Intelligent and Adaptive Malware Detection	445
<i>A. Peda Gopi, Aarthi Sri Muppalla, Gayathri Kethireddy, Charanya Kannedari, Bhargavi Gottumukkala</i>	
Nodal Prices Determination for PV Integrated Radial Distribution System using Optimal Power Flow Method	451
<i>D Navin Sam, Ganesh Dongre, V. Shanmugasundaram, Venkata Krishna Bokka, Sumit Pundir S. Senthil Kumar, Krishna Chaithanya Janapati, Kandi Bhanu Prakash</i>	
Performance Analysis of a Standalone DC Source Integrated with Electric Vehicle Charging System	457
<i>Pranay S. Shete, R. M. Moharil</i>	
Osprey Optimization Algorithm for MPPT of PV System with SEPIC Converter under Partial Shading Conditions	462
<i>Sandip Prabhakar Gath, Hussain Ahmed Choudhury, Chidige Somasankarappa, K Saneep, Vipashi Kansal M. Mahima, Krishna Chaithanya Janapati, Kandi Bhanu Prakash</i>	
Comparative Analysis of CNN, LSTM, TCN and GRU for Predicting Li-ion Battery Capacity	469
<i>Hannah Ajish, Rachneet Kaur, A Chitra, S Albert Alexander</i>	
DeepSense: Integrating wiener Filtering with Deep Learning for Enhanced Data Fusion in Wireless Sensor Networks	475
<i>G. IrinLoretta</i>	
AI-Enhanced Cybercrime Investigation Forensic Techniques Using ISO-Encoder: A Hybrid Anomaly Detection Approach	480
<i>P Suresh, V Sheeja Kumari, R H Aswathy</i>	
Performance Evaluation of NASNet Large for Cardiac MRI-Based Heart Disease Detection Compared to ResNet101 and DenseNet169	486
<i>Bhagyashree k. Lalasangi, R H Aswathy, P Suresh</i>	
Circuit Level Realization of Memristor Emulation of Adaptive LIF Neuron Model	493
<i>Ravi Pushkar, Kandregula Siddartha, Abhishek Kumar, Raushan Kumar, Rajeev Ranjan Kumar Akhilesh Kumar</i>	
A Strategic Approach For Optimal PMU Installation In Power System	499
<i>Satyendra Pratap Singh, Sonu Kumar Bairwa, Hanuman Bairwa, Rachna Tyagi</i>	

Design and Simulation of Hybrid Liquid-Air Thermal Management System for NMC Battery in Electric Vehicles	504
<i>Anand Raj Sagar, Ansh Mishra, Sanjay Kumar</i>	
Voltage THD-based Islanding Detection for Grid-Integrated Wind Farm Systems	510
<i>Ravi Shankar Tiwari, Mayank Pachauri, Jai Prakash Sharma</i>	
Model Order Reduction Using a Novel Hybrid Algorithm between PSO and Routh Stability	516
<i>Vikas Kumar, Souradip De, Arvind Kumar Prajapati</i>	
Modeling and Load Frequency Control of a 20 kW Renewable Picogrid with Hydro, PV, and Battery Storage for Remote Electrification in Manipur	522
<i>Somila Hashunao, R K Mehta</i>	
Human Activity Recognition Systems: Leveraging Hybrid Feature Selection and Classifier Fusion for Improved Accuracy	528
<i>Diwakar Tripathi, Alok Kumar Shukla</i>	
Multi-varient Feature Extraction and its Late Fusion with VGG-16 based Deep Feature for Oral Cancer Detection via Multiple Classification	534
<i>Govind Narayan Patel, Jitesh Pradhan, B Ramachandra Reddy</i>	
Solar Photovoltaic Panels Tilt Angle Optimization using Artificial Neural Networks	540
<i>Vima Mali, Pankaj Verma</i>	
Performance Analysis of Parabolic Solar Cooker with Bayonet Tube Receiver	546
<i>Abhishek Raj, Kunal Singh, Satish Kumar, R. V. Sharma, Shalendra Kumar</i>	
A Novel Soft Deep Learning Technique to Enhance Fashion Image Retrieval from Text Query	551
<i>Geeta Kasana, Sonal Kasana, Seema Wazarkar</i>	
Intelligent UPFC Control for Power System's Fault Performance Improvement	556
<i>Shruti Shirbhate, Prashant Jagtap</i>	
Load Frequency Control of Diversified Power System with Improved Fruit Fly Algorithm Based Fractional Order Regulator	562
<i>Ch. Naga Sai Kalyan, B. Srikanth Goud, Subhashree Choudhury, Swati Shukla</i>	
Environmental Surveillance in Subterranean Coal Mines Leveraging Robust Communication	568
<i>Trishanku Satpathy, Srijita Maiti, Kunjabihari Swain, Manas Ranjan Lenka, Amulya Ratna Swain</i>	
Automated Preprocessing and Deep Learning for Non-Invasive Anemia Estimation Using Conjunctival Images	574
<i>AparnaRajesh Atmakuri, G.Siprarani Patra, Gayatri Sahu, Ashutosh Tripathy, Trilochan Rout, Sunita Padhi</i>	
Fuzzy Logic Controller based Torque Ripple Minimization in Tesla Cybertruck's PMSM Drive	579
<i>Ajumon Kurian, Vivek Prakash</i>	
Design and Development of a Morphing Drone-Rover for Rescue Applications in Confined and Challenging Environments	584
<i>Unni.S. Kumar, M J Athul Krishna, Suraj Damodaran, Ajai V Babu, Chinchu Varghese</i>	
Blockchain-Based Management Systems For Organ Donation And Transplantation	589
<i>Teja Lakshmi Narayana Ganesh Kandi, Arul Prasath A, Ravi Teja Chindhukuri, Anusha Manam</i>	

Biogas to Hydrogen: A Comprehensive Analysis of Fuel Cell Efficiency and its Role in generating power and reducing Battery Usage	593
<i>Shashank Bhaskar, Om Hari Gupta</i>	
Data Analytics in Smart Grids: Implications for Privacy and Information Security	598
<i>Neeraj Kumar, Keshav Kumar Tiwari, Umesh Pathak, I. B. Lal, Manish Kumar, Nitesh Kumar</i>	
Intelligent IoT-Based System for Real-Time Agricultural Monitoring and Automated Irrigation	605
<i>Sudheer Nidamanuri, Madana Srinivas, A. Ranjith, A. Manusha Reddy, P. Subhash</i>	
Energy-Efficient Transmission Using Flight Inspired Nest Optimization in Cognitive Wireless Sensor Network	611
<i>S Kalpana, Devi, T Sivasakthi, D Vasanthi, K.J Vijay Priya, Mohankumar</i>	
Brain Tumor Segmentation using Adaptive Kernel K-Means Clustering and U-Net Architecture	617
<i>L. T. Hemalatha, M. Kalaiyarasi, S. Saravanan</i>	
Unknown Input Observer based Disturbance Rejection Scheme for Frequency Regulation	622
<i>Anuj Kumar Maurya, Sheetla Prasad</i>	
Comparison of PI/GWOA Tuned PI and Fuzzy Enabled D-STATCOM for Voltage Profile Enhancement of an IMMIG	628
<i>Charivil Sojy Rajan, Mabel Ebenezer</i>	
Performance Analysis of Potato Leaf Disease Detection using Deep Learning Techniques	635
<i>M Kalaiyarasi, M. Prameela, Chunchu Pushpa Latha, D S Naga Malleswara Rao Chintalapudi Adi Vinayaka, S. Saravanan</i>	
Evaluating Functional Verification Strategies for the Controller Area Network (CAN) Protocol	640
<i>Seema Kumari, Khushboo Singh, Ajay Kumar, Basudeba Behera</i>	
SecureIoTGrid: A Blockchain-Enabled Cybersecurity Framework for Resilient IoT-Based Smart Energy Grids and E-Mobility Ecosystems	645
<i>Rajkumar Bhola, G. Indra Navaroj, Monika Gorkhe, G Sajiv, Shivprakash.M. Varimani, B Kiran Bala</i>	
Predictive Modeling of Grid Power Loss in EV Charging Systems Using Ensemble and Neural Networks	650
<i>B. Srinivasarao, Kanaka Raju Kalla, Trinadha Burle, D. Vijaya Kumar, Jayalaxmi Anem Majji Durga Bhavani, Konna Akash, Ponnana Veda Sri, Dokkana Sagar</i>	
Leveraging Industry 4.0 IoT Platforms for Waste Minimization and Environmental Impact Reduction in Manufacturing	656
<i>Charu Bisaria, Rahul Pradhan, S.Suma Christal Mary, Monika Gorkhe, Sajiv G, B Kiran Bala</i>	
Enhancing Industrial Productivity through Integrated Automation Control Systems Using Edge-Based Smart Digitization Techniques	662
<i>Ruchi Sharma, Sreeja Rashmitha Duvvada, S. Suma Christal Mary, G Sajiv, Manoranjan Dash, I Infant Raj</i>	
Design and Implementation of an AI-Controlled Density-Based Signal Light Management System for Sustainable Smart Cities Using STM32-Nucleo	667
<i>S S Kiran, Appalabathula Venkatesh, K Guru Charan, L Urmila, M. Sanjay, K Sireesha</i>	
Predicting Future Traffic Scenarios from Grid Maps: Deep Neural Architectures for Scalable Data Pipelines	673
<i>Krishnam Raju Narsepalle, Balakrishna Aitha, Sreepal Reddy Bolla, Revanth Reddy Bandaru</i>	

Predictive Risk Modeling Using Statistical and Machine Learning Algorithms on Structured Clinical Data	679
<i>Navin Kamuni, Pavan Nutalapati, Jayapal Reddy Vummadi, Suresh Dodda</i>	
Evaluating the performance of electric vehicles using MATLAB and Traditional controllers	685
<i>Swati Sabnam Gan, Puvvula Venkata Rama Krishna</i>	
Mobile Microgrid Network Using Seamless Integration of Multiple Small Applications	691
<i>Nisha Gnanam, Raji Krishna, M Mahesh</i>	
Hybrid Fine-Grained Sentiment Analysis Approach for Patient Feedback in Multispecialty Hospitals in Raipur	697
<i>Priyanka Masih, Sunita Kushwaha</i>	
Starfish Optimization Algorithm Based on Iterative Chaotic Map to Enhanced Stability and Exploitation	703
<i>Muhammad Suhail Shaikh, Senlin Xie, Haoyue Lin, Chunwu Wang, Xiaoqing Dong, Waqar Khan</i>	
Enhancement of PV Panel Efficiency Using Reflection of Light Technique	708
<i>M. Leela Venkata Pavan Chandu, M.Raja Nayak, Badham DivyaVani, Kompalli Susmitha Tammisetty Sivaram, T. Nagaraju</i>	
Whale Optimization Algorithm With OppositionBased Learning Method For Enhancing Transmission Line Parameter Precision	713
<i>Muhammad Suhail Shaikh, Chang Wang, Haoyue Lin, Yifan Lin, Xiaoqing Dong, Wulfran Fendzi Mbasso</i>	
IoT-Enabled Nanogrid System for Real-Time Energy Data Monitoring and Analysis	718
<i>V S B Chaitanya Duvvury, Samala Richender Reddy, Mohammed Naheem Basha, Koppula Anusha Gaini Ramani</i>	
A Review and Comparison of Virtual Impedance and Virtual Frame Method in Microgrid Systems	724
<i>J. Venumadhav, D. Rajababu, Dm Vinod Kumar</i>	
Hybrid TGNN Approach for Event-Based Detection and Stability Assessment of Transient Events Using PMU Data	730
<i>Kunal Samad, Arunkumar Patil</i>	
Fusion-Based Deep Architecture Leveraging Convolutional Networks and Vision Transformers for Subtype Discrimination in NSCLC	738
<i>Irshad Khan, P U Neetha, Tessy Abraham Azhikakathu, D Somshekhar, Vijetha, Suman</i>	
Developing Secure IoT Communication Protocols to Ensure Sustainable Data Exchange in Industry 4.0 Networks	744
<i>Ashish Avasthi, Rahul Pradhan, V. Selvi, Nilesh Bhosale, G Sajiv, P. Nagaraj</i>	
Development and Simulation of a 5-Stage Constant Current Control Battery Management System	750
<i>Sweety Kumari, Khushboo Bharti, Supriyo Das</i>	
A Review of Contingency Assessment and Response Methods in Evolving Power Grids	754
<i>Saqib Asgar Kanth, Neeraj Gupta</i>	
FitTech Revolution: Crafting and Monitoring Fitness Regimen using BERT & Computer Vision	760
<i>Ketan D. Bodhe, Kamlesh Kalbande, Asakti Rautkar, Bhagyashree Hambarde, Pranay Saraf, Ashvini Bais</i>	
A Hybrid Attention U-Net and Swin Transformer Framework for Retinal Blood Vessel Segmentation	765
<i>Divyansh Dhatwalia, Vikas Wasson, Gaurav Bathla</i>	

Impact of tilt angle on bifacial power gain of a bifacial solar photovoltaic (PV) module: A comparative study with monofacial (rear side covered) module	773
<i>Achintya Basak, Suprava Chakraborty, Aruna Kumar Behura</i>	
Review of Deep Learning and Explainable AI Approaches for Skin Cancer Detection in Embedded Biomedical Systems	779
<i>Ritu Sharma, Animesh Kumar Agrawal</i>	
Closed-Loop Analysis of DC-DC Buck Converter With Dynamic Load Conditions	785
<i>Hari Charan Nannam, Gotluru Manideep Reddy, Gottimukkula Koushik, Majji.Sai Manohar</i>	
Real-Time Data Analysis on Existing Automatic Power Factor Correction Panels Using Raspberry Pi and Multifunctional Meters	790
<i>V S B Chaitanya Duvvury, Julluri Vaishnavi, Adimoolam Rupesh, Chakali Sai Praneeth</i>	
Conversion of Waste Heat into Useful Energy Using Thermoelectric Generators for the Conservation of Energy	795
<i>Samir Rai, Ahmed Elhadi, Rufaro M Bope</i>	
Hybrid Simulation and Modelling Framework for GaN HEMTs Integrating Compact Models and Electrothermal Analysis in LTspice and MATLAB	801
<i>Vikram Kumar Saxena, Kundan Kumar, Benjamin A Shimray</i>	
Cloud-Based Water Quality Surveillance System for Hybrid Predictive Analysis of Water Bodies	807
<i>Ananya Choudhury, Abhijit Das, Arnall Saikia, Nitish Gogoi, Rajarshi Dutta</i>	
Improved Grid Performance using Novel Control Technique under G2V and V2G Operation	813
<i>N Venkata Koteswara Rao, K. Bala Krishna</i>	
Comparative Analysis and Optimization of Advanced DC/DC Converter Control Strategies in EVs	819
<i>Sandra Muniraja, Sachidananda Sen, Chidurala Sai Prakash</i>	
Design of IoT-Based Smart Fault Detection System for Transmission Lines	825
<i>S S Kiran, Appalabathula Venkatesh, P Jairam, S.Santhi Kumari, P Yamini, P Pradeep Kumar</i>	
A Comprehensive Review on Multilevel PFC Rectifier Topologies for EV Applications	831
<i>Pothumahanty Sai Jyothi, Naresh Patnana</i>	
Hardware Design of a closed-loop Buck Converter with PID Control Algorithm for low Power Applications	837
<i>Abhinav Nishith, Ravi Bhushan, Jai Ram</i>	
An extensive critique cybersecurity threats and mitigation strategies in smart grid networks	843
<i>D Sarathkumar, Raymon Antony Raj, T P Saravanan, A.R Anil, B.K. Parrthipan, Murugesan Manivel G Guna, Sivakumar Annamalai, J. Karthikeyan</i>	
Enhancement of Essential Dielectric Properties of Waste Transformer Oil Collected from Rural Substations Using a Chemical Composite	849
<i>D Sarathkumar, Raymon Antony Raj, Sampath Kumar Venkatachary, Leo John Baptist Andrews Annamalai Alagappan, G Guna, V Anusharani, Murugesan Manivel, B.K. Parrthipan, P. Maheswari</i>	
A comprehensive review of the integration of electric vehicles into the smart grid	855
<i>D Sarathkumar, Raymon Antony Raj, Sampath Kumar Venkatachary, Leo John Baptist Andrews Annamalai Alagappan, G Guna, V Anusharani, Murugesan Manivel, B.K. Parrthipan, Sabarish Ponnusamy</i>	

EV Charging Infrastructure Development in Smart Grids	861
<i>D Sarathkumar, Raymon Antony Raj, Sampath Kumar Venkatachary Grant, Leo John Baptist Andrews</i>	
<i>Annamalai Alagappan, Guna G, Anusharani V, Murugesan Manivel, B.K. Parrthipan, Sabarish Ponnusamy</i>	
Modeling and Experimental Investigation of Thermoelectric Power Generation for Enhanced Waste Heat Utilization in Biomass Cookstove	867
<i>Shankar Pandit, Dulal Chandra Das, Biplab Das, Rituraj Dey</i>	
Movie Recommendation System Based on User Mood: An Integrated Approach with Sentiment Analysis and Real-Time Personalization	873
<i>Manjot Kaur Sidhu, Arvinder Kaur, Amanpreet Kaur, Nitesh Kumar</i>	
Design and Development of a Low-Cost Innovative E-Bike with Integrated Speed Limiting and Geometric Performance Testing: A Case Study Approach	879
<i>Appalabathula Venkatesh, J Vijaya Kumar, S S Kiran, Durga Hemanth Yannam Reddy, Rakesh Kona</i>	
<i>Ramana Babu Sanapala</i>	
Dual-layer Integrated MPC and SMC-based Energy Management Strategies for Hybrid Electric Vehicles	885
<i>Swathi Lavudya, Sachidananda Sen, Basetti Vedik, Chandan Kumar Shiva</i>	
A Comprehensive Comparison of Image Segmentation Techniques for X-Ray Imaging	891
<i>Shashikala H K, Suresh M B</i>	
XGBoost-Powered Prediction of Electric Vehicle Eligibility for Clean Alternative Fuel Programs	897
<i>Ashok Ganga, Trinadha Burle, Kanaka Raju Kalla, D. Vijaya Kumar, Bibhuti Bhusan Rath, Choutha Sirisha</i>	
<i>Nagarampalli Atreyi, Kanchumoju Sai Kumar, Goddu Radha Krishna</i>	
System for Recommending Crops Through Machine Learning	903
<i>Kirti Shukla, Megha Garg, Sourabh Pal, Gaurav Kumar, Monika Verma, Deepesh Kumar</i>	
Enhancing Power Quality in a Three-Phase HES System Using a Slime Mould Algorithm-Based FOPI Controller Integrated with UPQC	909
<i>Khushboo Bharti, Shravan Kumar Yadav, Sweetey Kumari, Mrinal Kanti Sarkar, Simanta Kumar Samal</i>	
From ARIMA to Attention: Power Load Forecasting Using Temporal Deep Learning	915
<i>Suhasnadh Reddy Veluru, Sai Teja Erukude, Viswa Chaitanya Marella</i>	
Hybrid Quantum-Classical Machine Learning for Software Requirement Risk Classification	920
<i>Pathan Shaheen Khan, Chandan Kumar</i>	
Advanced Packed U-Cell Inverter Topology for High-Efficiency Power Conversion	926
<i>Aliya Zahoor, Neeraj Gupta</i>	
Performance Evaluation and Decision Framework for Lightweight Cryptography in Resource-Constrained IoT Environments	932
<i>Saroj Kumar Rajak, Rachna Kumari, Sanjay Kumar</i>	
AI-Driven Face Mask Compliance Monitoring for Health and Safety	938
<i>Vikas Attri, Anand Kumar Shukla, Rishi Chopra, Rajat Patial, Ankit, Ankush Kapoor</i>	
Revolutionizing Pancreatitis Diagnosis: An Early Detection Deep Learning Solution	943
<i>Vikas Attri, Anand Kumar Shukla, Rishi Chopra, Gurpreet Kaur, Ankush Kapoor, Arvinder Singh</i>	

Hybrid GRU-Convolutional Neural Networks for Alzheimer's Progression Prediction from Neuroimaging	950
<i>Parthasarathi Pattnayak, Tulip Das</i>	
Integrating Ensemble Learning and Blockchain in Healthcare to Optimize Decision-Making and Data Management	956
<i>Parthasarathi Pattnayak, Tulip Das, Sanghamitra Patnaik, Arpeeta Mohanty, Shashwata Sahu Shaina Santosh Das</i>	
Hybrid Energy System Performance Enhancement by Implementing Artificial Bee Colony Optimization	962
<i>Hemant Sharma, Abinash Singh, Kamalkant Sharma</i>	
Power Quality Disturbance Classification Assessment Using Logistic Regression Algorithm	967
<i>Madgula Satyanrayana, Venkataramana Veeramsetty, Durgam Rajababu</i>	
A topology of single-phase bidirectional converter for Plug-in Electric vehicle application	973
<i>Abhishek Kumar, Kumari Archana, Durgesh Choudhary, Madhu Singh</i>	
Optimizing Smart Grid Performance through Real-Time State Estimation and Forecasting using Deep Learning based LSTM Models	978
<i>S. Balakrishnan, S. Simonthomas, S. Senthil Kumar, K. Srinivas Rao, M. Madhan Kannan</i>	
Post Quantum Secure Framework for IoT Based EV Battery Swapping Stations in Sustainable Transport Networks	984
<i>Ruchi Sharma, Mohd Khizar Syed, Sudhakar Ajmera, S. Sandhiya, Manoranjan Dash, A. Balakumar</i>	
A RFXGB Classifier for Lung Cancer Prediction	989
<i>Dontha Madhusudhana Rao, Gopi Kistam, Boggavarapu Yashwanthkumar, Nathani Rohith Dasari Bhimalrahul</i>	
Multi-Functional ZA-LMS Controlled 1-Phase Grid-SPV System	996
<i>Dheeraj Kumar, Shailendra Kumar, Sanjeev Singh</i>	
Towards Efficient Power Control in Fuel Cell Electric Vehicles with Braking Energy Recovery	1002
<i>Kumari Archana, Madhu Singh, Simanta Kumar Samal</i>	
A Hybrid Approach for Accurate SoC Estimation of Li-ion Battery by Using CCM and CC, CV Control of EV Applications	1007
<i>Rajeev Ranjan, Umesh Kumar Sinha, Ravikant Kumar</i>	
Green IoT Communications with ASCON-MQTT: A Framework for Secure and Low-Power Connectivity	1011
<i>Asim Kumar Panda, Ranjit Haldar, Amartya Roy, Himadri Sekhar Mondal, Balaram Ghosal Asis Kumar Bhunia</i>	
Hybrid Reference PWM for Asymetric 7 Level Inverter (A7LI) With Reduction in Circuit Element	1017
<i>Nuramalina Bohari, Vijayakumar Arun, Albert Alexander Stonier, Geno Peter</i>	
Performance Comparison of LC and LCL Filters in a Solar-Boosted Inverter System for Energy Efficient for Power Systems	1023
<i>Sreedevi Kunumalla, Durgam Rajababu, Avv Sudhakar, B Sathyavani</i>	
Quantum-Enhanced State-of-Charge Estimation for Lithium-Ion Batteries Using Hybrid Variational Algorithm	1027
<i>Surasi Sharan Kumar, D.M. Vinod Kumar, Ram Deshmukh</i>	

Novel 9-Level Switched Capacitor Inverter with Reduced Components and Variable Frequency PWM	1033
<i>Geno Peter, Albert Alexander Stonier, Vijayakumar Arun, Samat Iderus</i>	
Closed-form Analytical Expression for Moment of Inertia of Switched Reluctance Machine Rotors	1038
<i>Samrat Das, G. Narayanan</i>	
Big Data Visualisation Using Multimodal Learning Feedback Analysis	1044
<i>Aakansha Soy, Chand Tandon</i>	
Automated Hosting of Static Websites on AWS S3 using Terraform	1051
<i>Dhawan Singh, Sahil Sharma, Aditi Thakur</i>	
Design and Implementation of Sensorless Field-Oriented Control for a Solar-Battery Integrated IMD in EV Applications	1057
<i>Praveen Kumar, Vinay Thapar, Ranen Sen</i>	
Hybrid AI-Based Detection of High Impedance Faults Using Time-Frequency Features and Adaptive Thresholding in Distribution Systems	1062
<i>Takudzwa Marshal Makumbirofa, Vipin Chandra Pal, Sheetla Prasad</i>	
Performance Realization of Multiple Inductive Active-Cell Balancing Technique for EV Applications	1068
<i>G Vijayakumar, A Saranya, R Sundar, C Ramkumar, P Rajakumar, Pranav Kumar Rowlo</i>	
Optimizing Short-Term Hydrothermal Dispatch: A Robust Solution via Artificial Protozoa Optimizer	1074
<i>Sujoy Das, Satya Narayan Agarwal, Laishram Khumanleima Chanu</i>	
Stability Analysis of Double Reference P&O and ANN MPPT in PV Systems	1079
<i>Jayanta Kumar Sahu, Shreyansi Nanda, Sampad Kumar Pradhan, Chittaranjan Swain</i>	
<i>Dipika Debasmita Panda, Jyoti Prasad Patra</i>	
Term Deposit Customer Prediction: Leveraging Explainable Boosting Machine (EBM) with Bank Marketing Data	1085
<i>Rahul Prasad, Mohit Choubey, Praveen Kumar Tyagi, Ajay Sharma, Ebtasam Ahmad Siddiqui</i>	
<i>Swati Gautam</i>	
Multi-Class Sentiment Analysis with Fine-Tuned Transformer Models	1090
<i>Jayapal Reddy Vummadi, Suresh Dodda, Navin Kamuni, Pavan Nutalapati</i>	
Sustainable Nanocomposites for Energy Storage and Intelligent Computing in Eco-Efficient Systems	1096
<i>Rajesh Kumar, Roop Lal, Bhupinder Singh</i>	
Exploring the Impact of Artificial Intelligence and Machine Learning on Smart Distribution System	1102
<i>Vibhuti Rehalia, Vaishali Seyal, Ankush, Naveen Kumar Sharma</i>	
Hybrid Deep Learning Techniques for Enhanced Detection of Tumors and Abnormalities in Medical Imaging Data	1109
<i>Sheetal Vijay Kulkarni, Malik Bader Alazzam, Anuja G Gunale, Sattar Jabar Daham Wassif</i>	
<i>Abdalsalam Taha Hussain Ali, P. Nagaraj</i>	
Designing Resilient Integrated Systems Engineering Architectures for Robust Cybersecurity Against Emerging Threats	1115
<i>Ashish Avasthi, S.Suma Christal Mary, Ajmeera Kiran, Bvn Prasad Paruchuri, Jyothi Preshiya</i>	
<i>Dhaaraani R</i>	

AI-Driven Cricket Shot Classification: A CNN and Random Forest Hybrid Approach	1121
<i>Ritu Sharma, Manjot Kaur Sidhu, Neera Batra</i>	
Fuzzy-PINN: A Novel Framework for Robust Climate Anomaly Detection and Prediction	1127
<i>Himadri Sekhar Mondal, Niladri Bhattacharjee, Apu Baidya, Ranjit Haldar, Asim Kumar Panda</i> <i>Balaram Ghosal</i>	
Design of Fully Automatic Pulverizing Plant using PLC Logic and HMI Graphics	1133
<i>Jheel Dayalani, Sarika S. Kanojia</i>	
Sepsis Risk Prediction Using Temporal Convolutional Networks Applied to Time-Series Health Monitoring Data	1139
<i>I.S. Chakrapani, Rahul Pradhan, Manivannan Govindasamy, Dr Anita Pradhan, Dr Ajmeera Kiran</i> <i>M Ponni Valavan</i>	
A Gate Signal Feedback Method for Dynamic Delay Estimation and Dead Time Correction in Parallel GaN MOSFETs	1144
<i>Pramod Kumar, Harish Sudhakaran Nair</i>	
Machine Learning vs. Deep Learning: A Comparative Analysis for Early Detection of Neurological Disease Progression	1150
<i>Keerthi Reddy Gudibandi, Serena Mendanha, Chamarthi Sreenivasulu, Srinivasa Rao Pokuri</i> <i>Koduru Hajarathaiah</i>	
The Impact of Flex Fuel in India: Financially and Environmentally	1156
<i>Meenakshi Munjal, Prashant Kr. Singh, Lucky Ali, Shivam Singh, Sanni Kumar, Rajat Saini</i>	
SE-FedMLP: A Federated Learning Approach with Squeeze-and-Excitation MLP for Crop Recommendation	1161
<i>Harinder Kaur, Sarabjit Kaur, Gyana Ranjana Panigrahi, Chaitanya Singla</i>	
LSF Integrated Hippopotamus Optimizer Algorithm for Single DG Optimization in Radial Distribution Power Network	1167
<i>R Vinay, Sundar R, M Selvakumari, A Sakthidasan, P Saravanakumar, P Rajakumar</i>	
Monkeypox Skin Lesion Classification Using Hybrid Deep Learning Model	1173
<i>V. Keerthi Kiran, Sonali Dash, Gupteswar Sahu, Gulivindala Suresh</i>	
Plant Disease Identification based on LIME-CNN	1179
<i>Sonali Dash, V.Keerthi Kiran, Gupteswar Sahu, Venkata Lalitha Narla</i>	
Mind Matters: AI Driven Advanced Diagnostic of Mental Health	1184
<i>Shrey Gandhi, Vidhi Sheth, Shruti Sahu, Rishabh Singh, Hezal Lopes</i>	
Legal and Ethical Dimensions of Healthcare 4.0: Emerging Applications, Challenges and Future Development of Healthcare Metaverse	1190
<i>Shashwata Sahu, Ramesh Chandra Sethi, Parthasarathi Pattanayak, Arpeeta Mohanty, Tulip Das</i>	
Module Voltage Guided Global Maximum Power Point Tracking Algorithm	1197
<i>Pankaj Verma</i>	
Investigating the Effects of Age and Treatment on Sleep Quality in Breast Cancer Patients	1203
<i>Swati Singh, Sonal Sharma, Dharmendra Kumar</i>	

ResNet-Swin Transformer Fusion with Shifted Window Attention for Multi-Class Plant Disease Classification with Weighted Sampling	1208
<i>Kishor Chettri, Biswaraj Sen, Rupert Anand Yumlembam, Palash Ghosal</i>	
Review on Optimizing Cloud Computing: Resource Allocation, Task Scheduling, and AI-Driven Enhancements	1214
<i>Bommineni Narsimhulu, T. Sampath Kumar</i>	
AI-Based Traffic Prediction and Network Management: Enhancing Urban Mobility and Congestion Control through Machine Learning and Hybrid Algorithms	1220
<i>Sripelli Jagadish, T. Sampath Kumar</i>	
Advancements and Challenges in Fraud Detection and Fairness-Aware Machine Learning: A Comprehensive Review	1226
<i>Thotakoori Jyothi, Mohammed Ali Shaik</i>	
AI-Driven and Bio-Inspired Algorithms for Network Optimization: A Review of Applications, Challenges, and Case Studies	1232
<i>Padala Sravan, Mohammed Ali Shaik</i>	
Exploring the Influence of R&D Expenditure and Sectoral Contributions on Economic Growth in Indian Cities: A Predictive analysis of GDP Drivers	1238
<i>Garima Vijh, Nisha Sharma, Shivam Tiwari, Surbhi Vijh, Sumit Kumar</i>	
A Novel AI-Based Predictive Crowd Monitoring and Stampede Prevention System	1243
<i>Nishant Kumar, Dhaval Deshkar, Chetan Kasera</i>	
Strategic Integration of CNN and Random Forest for Citrus Gummosis Disease Identification	1249
<i>Taranjeet Kaur, Spinder Kaur, Radhika Singla</i>	
Neuromorphic Mechatronic System for Real-Time Robotic Reflex Generation Using Spiking Neural Networks	1255
<i>Sri Lavanya Sajja, Adnan Burhan Rajab, Bobonazarov Abdurasul, Ajmeera Kiran, G Sajiv, M. Karthik</i>	
Autonomous Vehicle Path Optimization Using a Hybrid Chaotic Pattern Search Algorithm: A Comparative Study with PSO	1260
<i>Hariprita Satish, Avighna Reddy Katipally, Sarada Jayan</i>	
ML-Driven MPPT Optimization for Photovoltaic Systems Under Dynamic Shading Conditions	1266
<i>Abdullah Umar, Abdul Moeed Khan, Aibat Muzarap, Prashant Kumar Jamwal</i>	
Energy Management System for Electric Vehicles: A Proportional-Integral Controller Approach	1272
<i>Sundeep Siddula, Thatikonda Jayakrishna, J N Bhanutej</i>	
Energy Management System for Electric Vehicles: Adaptive Neuro-Fuzzy Inference System	1278
<i>Sundeep Siddula</i>	
Enhancing EV Efficiency with PI and Fuzzy Logic Control System using Energy Management System	1284
<i>Sundeep Siddula, Thatikonda Jayakrishna, J N Bhanutej</i>	
Robust Power Flow Regulation in MTDC Grid Through Terminal based Current Flow Controller	1291
<i>Md. Shariph Ansari, Sheetla Prasad</i>	
Enhanced Load Frequency Control in Deregulated Power Systems using LQLMI-based Optimization	1297
<i>Tarannum Bahar, Sheetla Prasad</i>	

A Review of Fault Detection Method Available for BLDC Based EV System	1303
<i>Anshika Gupta, Abhishek Kumar Pandey, Munish Yadav, Monalisa Biswal</i>	
Design and Hardware Implementation of an H-Bridge DC-DC Converter for Power Supply Applications	1309
<i>Kavin Mathalai, Linda Mary Zacharia, Nabivullah Syed, Farhan Ahmad Khan, Harish Sudhakaran Nair</i>	
Design and Implementation of Approximate Multiplier based Architectures for High Speed Signal Processing and Transformation Applications	1315
<i>S Yashwanthraj Kanna, N Jayanth, M Balamurugan, K Mariammal, Ms Vinotheni</i>	
Hybrid CNN-Transformer Model for Scalable and Robust Phishing URL Detection	1322
<i>Kamaljeet Kaur, Ankit Kumar Jain</i>	
AdaLane: Adaptive Lane Alignment in Autonomous Driving Agents for Preventing Deviation in Unmarked Roads	1328
<i>Subhadip Chandra, Kamlesh Kumar Dubey, Gaurav Agarwal, Anumoy Pathak</i>	
Edge-Enhanced Deep Learning for Efficient Microgrid Communication: A Visualization Approach	1334
<i>Shruthi Devadhas, R. Rengaraj, Partheeban Pon, A Selva Reegan, D Preethi, Rathi Abeth</i>	
Comprehensive Evaluation of Machine Learning, Deep Learning, and Hybrid Models for Pneumonia Detection Using Chest X-rays	1340
<i>Teja Sai Maddirala, Prajwal Aaryan Immadi, Sai Nihar Kunala, S Tanishq, Koduru Hajarathaiah Srinivasa Rao Pokuri</i>	
Toward Secure and Scalable Access Control in IoT for Smart and Sustainable Systems: A Hybrid RBAC-ABAC Survey and Roadmap	1348
<i>Mishra Mridul Kailashchandra, Udai Pratap Rao, Pintu Chauhan</i>	
Thermal Dynamics of Aggressively Scaled Redundant Free Robust D Flip-Flop for Next Generation AI and IoT Applications	1354
<i>Syeda Hurmath Juveria, J. Ajayan, Shashank Rebelli</i>	
Load Frequency Control of RE Integrated Smart Deregulated Power System Using Deep Q Neural Network Controller	1358
<i>Nausheen Bano, T Anil Kumar</i>	
Efficient Simulation and RTL Implementation of the SPECK Algorithm Using Verilog for Improved Cryptographic Security and Performance in VLSI Based Systems	1365
<i>C Ravindranath, Syed Ateequr Rehman, G Kavya Shri, Sindhu K, G Pavithra, Swapnil S. Ninawe</i>	
Analysing the Impact of Flexible Power Point Tracking in Grid-Tied PV Systems with Varying Solar Irradiance and Load Conditions	1371
<i>Ved Pravir, Tanmoy Roy Choudhury</i>	
Machine Learning-Powered Network Traffic Classification on LSNM2024	1377
<i>Subhash Singh Negi, Rashmi Agrawal, Ashish Karan</i>	
Comparative Analysis of Control Strategies for Full-Bridge Converter Based Programmable DC Power Supply	1383
<i>Nimmy Paulson, Rijil Ramchand, Harish Sudhakaran Nair</i>	
Leveraging Machine Learning Techniques for Intrusion Detection System Using UNSW-NB15 Dataset	1389
<i>V.S.R. Pavan Kumar Neeli, Venkata Ramana Gupta Nallagattla</i>	

Assessing the Predictive Accuracy of Linear and Ensemble Models in Solar Energy Generation Estimation	1395
<i>Ashok Ganga, Trinadha Burle, Manmadha Kumar Boddepalli, Tamminaina Lokanadha Rao</i>	
<i>Akhilash Pennam, Kanaka Raju Kalla, Suryanarayana P S Kornu, M. Ramana Murty, Panga Vasu</i>	
Green Energy Adoption in India: Boosting Economy and Environment for Sustainable Development	1401
<i>Khushi, Rattan Pal Singh Rana, Sakshi Mehta</i>	
Enhancing IoT-Enabled Electric Vehicle Battery Performance Monitoring and Prediction using AI Techniques	1407
<i>Mummadi Durga Bhavani, K. Kalyan Kumar</i>	
Optimizing Microgrid Efficiency through Edge Computing: A Comparative Analysis with IoT Technologies	1413
<i>Shruthi Devadhas, R. Rengaraj, M. Supriya, C Bastin Rogers, D Preethi, Rathi Abeth</i>	
PolarResNet-WBC: Enhancing White Blood Cell Classification via Polar Image Encoding and Residual Learning	1419
<i>B Chandrababu Naik</i>	
Smart Energy Monitoring & Appliance Level Power Consumption Analysis: An Integrated Approach for Residential Energy Efficiency	1425
<i>Deepshikha Shrivastava, Atharva Khabale, Utkarsh Kashid</i>	
Hybrid Energy Storage Integrated GridConnected Fuel Cell Power Management System	1432
<i>A. Murali, K. Vijaya Bhaskar Reddy, Golla Naresh Kumar, Alladi Pavan Raj, Anthannagari Praveen</i>	
<i>K. Praneeth Kumar</i>	
Comparative Analysis of Clustering Algorithms for Identifying Wind Turbine Operating Regimes from SCADA Data	1437
<i>A K Prajwal, Ahamed Sarfraz, S Sridhar</i>	
Solar PV-Battery System Connected with the Power Grid: A Comparison of FLC and P&O MPPT	1442
<i>Amit Bharti, Shubhranshu Kumar Tiwary</i>	
IoT-Based Underground Pipeline Monitoring and Fault Identification System for Sustainable Infrastructure	1448
<i>S Hariharan, A Vignesh, V Harini, D Faridha Banu, V Brindha, J Akshaya</i>	
A Multi-Feature Attention-Based CycleGAN for Sonar-to-Visual Domain Translation and Optimized YOLOv8-Based Underwater Object Detection	1455
<i>Rallabandi Devi Uma, Venkata Ramana Gupta Nallagattla</i>	
Behavior Based Classification And Clustering Of Credit Card Transactions With XAI	1462
<i>Dontha Madhusudhana Rao, Sovenahlli Karanam Tanusri, Nayana Ammisetty, Marva Meraj</i>	
<i>Raj Kumar Batchu</i>	
Integrated Solar Microgrid with Real-Time Data Acquisition and Web-Based Dashboard for Monitoring	1469
<i>Sridhar Mohanty, Prasadini Sahu, Lalat Keshari Parida, Sasmita Padhy, Murthy Cherukuri</i>	
<i>Kunjabihari Swain</i>	
Design and Analysis of different topologies of Track and Hold circuits for Analog-to-Digital Converters	1473
<i>Sweta Kumari, Shipra</i>	

Optimal Capacitor Sizing and Placement in Distribution Networks Using TLBO: Case Studies on IEEE 10-Bus and 33-Bus Systems	1479
<i>Sagar Belamagi, Mohammed Hussain Khasab, G Swetha Shekarappa</i>	
Cyber-Enhanced Dynamic VAR Management in Single-Phase Grids via an IoT-Based Control Loop	1485
<i>Subhajit Roy, Shrayam Sarmah, Ashmita Sutradhar, Dulal Chandra Das, Nidul Sinha</i>	
Data-Efficient Prediction of Solar Global Tilted Irradiance Using CatBoost and Kneedle-Based Split Optimization	1491
<i>Kanaka Raju Kalla, Trinadha Burle, Bandaru Ramesh, Ashok Ganga, Kumaraswamy Simhadri Randhi Bindu, Manipatruni Manojkumar, Menda Kiran Kumar, Gudla Gayathri</i>	
Machine and Deep Learning-Based Sentiment Analysis of ChatGPT Tweets	1497
<i>Simran Thakur, Yashwant Kumar, Alka Jaswal, Priyanka Kumari</i>	
Machine Learning-Based Compressive Strength Prediction for Concrete: An Adaptive Boosting Approach with Explainability	1503
<i>Venu Malagavelli, R. Ramya Swetha, Gvr Seshagirirao, Sonal Saluja, Budumuru Giri Teja Santosh Tripurana, Kanaka Raju Kalla, Trinadha Burle, Subhendu Sekhar Sahoo</i>	
A Unified CNN-based System with Grad-CAM for Brain Tumor Segmentation and Classification	1509
<i>F Rosita Kamala, Jitha Janardhanan, Beena Suresh Gaikwad, R Annakumari, Sheetal Nithin</i>	
Demand side management scheme for different loads using genetic algorithm	1515
<i>Eqan Azad Bangi, Neeraj Gupta</i>	
Short-Time Fourier Transform Approach for Composite Power Quality Disturbance Analysis	1521
<i>Madgula Satyanrayana, Venkataramana Veeramsetty, Durgam Rajababu</i>	
Reinforcement Learning-Inspired Ensemble Framework for Robust Facial Emotion Recognition	1527
<i>Gayathri Soman, M.V. Judy</i>	
Control and Performance Analysis of a Three-Phase PWM Converter as Active Rectifier and STATCOM	1533
<i>Arkendu Mitra, Sumana Chowdhuri</i>	
Comparative Study of P&O, ANN, ANFIS and CSO based algorithm for stand Alone PV systems	1539
<i>Saroj Kumar Mishra, Jayanta Kumar Sahu, Kumar Abhisek</i>	
Thermal performance investigations of dichromatic and polychromatic LED luminaire	1545
<i>A.M Colaco</i>	
Comprehensive Industrial Motor Fault Detection and Predictive Control: A Hybrid Deep Learning and IoT-Based Approach	1551
<i>Dhruv, Anubhav Rajawat, Aftab Ahmed Ansari</i>	
Design and Performance Analysis of LCL Filter-based Three-phase Stand-alone Inverter with Induction Motor Drive	1557
<i>Sujoy Bhowmik, Prantik Datta, Suryendu Dasgupta, Arkendu Mitra</i>	
Enhancing Startup Support in TBIs through AI and IoT-Enabled Decision Systems	1562
<i>Mohd Tabrej Alam</i>	

An Advanced Programmable Reactor Based Ride Through Scheme for Stable Operation of DFIG Based Wind Energy Conversion System	1568
<i>Subhendu Sekhar Sahoo, Rupali Mohanty, Trinadha Burle, Kalyan Chatterjee</i>	
Low Voltage Ride through Scheme for DFIG based Wind Energy Conversion System using Enhanced Demagnetization Control	1574
<i>Subhendu Sekhar Sahoo, Trinadha Burle, Bevara Srikanth, K.K. Deepika, Ankit Garg</i>	
Unveiling the Role of Atmospheric Pollutants in Solar Radiation Prediction: A Deep Learning Comparative Approach	1580
<i>Bongoni Naresh, Amit Kumar Yadav, Hasmat Malik</i>	
A SPICE Simulation Study of Stacked Inverters and Transistors Type D Flip-Flop Designs with 16-nm CMOS Technology	1585
<i>Md. Badhessa, J. Ajayan, Sandip Bhattacharya, Motla Sathwika, Mulstham Karthik Purnachander Nagavelly Tarun Teja</i>	
Reliability Investigation of High Performance Nanoscale Dual Edge Triggered (DET) TSPC-D-Flip Flops for Future Low Power Electronics	1590
<i>Md. Badhessa, Motla Sathwika, J. Ajayan</i>	
A Self Sustaining Solar Tracker Using Thermo Responsive Nitinol Actuators	1595
<i>S Jegadeesan, Arun Sekar Rajasekaran, S Suguna, V Visnupriya, S Yogadharani, E Yuvasri</i>	
Integrated Wearable Health Monitoring and Emergency Response System With IOT Sensors, AED and Mobile App for Enhanced Patient Outcomes	1601
<i>S Sibiya, M Ruba, M Ponkarthika, M Vijayasabarishwari, S Sheba, S Vignesh, M Sanjay, S Siva Sankar</i>	
Comprehensive Review of Reactive Power Challenges in Distribution Systems and Advanced Mitigation Strategies	1607
<i>Hussain Tak, Neeraj Gupta, Mairaj Ud Din Mufti</i>	
Analysis and Implementation of a Non-Isolated DC-DC Converter with High Voltage Gain for DC Microgrid Applications	1613
<i>Karvala Yogesh, Harish Sudhakaran Nair</i>	
Quantum-Enhanced Deepfake Detection: A Hybrid Classical-Quantum Deep Learning Approach	1619
<i>Aryaman Dass, Mahesh Jangid</i>	
Optimal Selection of Electric Vehicle Charging Station with Best-Worst Method and Grey Relational Analysis	1625
<i>Anju Bala, Ritula Thakur, Shimi Sudha Letha</i>	
Random Forest Techniques in Predicting Power Generation of OWC Device	1631
<i>Snehal Yutika, Santanu Kumar Dash, Santanu Koley</i>	
Multi-Layered Cybersecurity for Smart Power Grids Using AI and Machine Learning for Real-Time Threat Detection and Prevention	1637
<i>Saket Kumar Mishra, Krishna Bihari Yadav</i>	
A Hybrid GBDT-DNN Model for Optimizing a Piezoelectric Wave Energy Converter Device	1642
<i>Palaniappan Ramasamy, Santanu Kumar Dash, Santanu Koley</i>	
PPG To ECG Conversion Device	1648
<i>Alister Moras, S Sridhar</i>	

NLP and Explainable AI for Clinical Decision Support: A Comprehensive Review with Emerging Quantum Perspectives	1653
<i>Dattatray Raghunath Kale, Swati Shirke-Deshmukh, Sandeep Gajanan Sutar, Abhijeet Sanjay Tadasare</i>	
KubeTranscode: A Distributed FFmpeg-based System for DASH Transcoding at Scale	1659
<i>Sheshasai Reddy, Onam Sarode, Haridas Singh, Pramod Bide</i>	
AI-Powered Data Analytics for IoT Systems: A Review on Efficient Processing at the Edge and Beyond	1665
<i>Vivek Lakshman Bhargav Sunkara</i>	
Developing Privacy-Preserving Mechanisms for Secure Data Exchange in Decentralized Supply Chain Management Platforms	1671
<i>Charu Bisaria, Ali Almoshawah, Ashish Avasthi, T. Satish, Sajiv G, Sankari V</i>	
Soft Computing Solutions for Efficient Fault Detection in Transmission Lines	1677
<i>Prema Daigavane, Shradha Umathe, Shrikant Chavate, Pranita Tembhurne</i>	
Decentralized Demand Side Management using IoT	1683
<i>Ansh Mishra, Anand Raj Sagar, Niranjana Kumar</i>	
Sustainable Peak Load Management in Growing Islanded Microgrids Using Integrated Battery Energy Storage System & Vehicle-to-Grid Systems	1689
<i>Malshi Ekanayaka</i>	
Hyper tuning of Multi-Layer Perceptron Model to detect shunt faults in single line Power Transmission System	1696
<i>Koyi Kotaiah Chowdary, L. Vamsi Narasimharao, M. Sunil Kumar, M. Vijaya Raghvendra, J. Ayyappa Karishma Nalla</i>	
WePay: Secure Ethereum Transactions For The Modern World	1702
<i>Nandini Babbar, Priyank Pahwa</i>	
Energy-Efficient Post-CMOS Computing Using Non-CMOS Devices and AI-Driven Optimization Techniques	1709
<i>Shamim Ahmad Khan, Mohammed Saleh Al Ansari, Kannan Ramakrishnan, Hassan Safi Ahmed Mina Ismail Mahmoud, P Bhavani</i>	
Analysis of PI-Controlled Active Boost Converter for Unity Power Factor Applications Under Various Load Conditions	1715
<i>Purbipriya Nayak, Yeddula Pedda Obulesu</i>	
An Innovative Machine Learning Framework for Classification of Natural Events and Cyber Attacks in PMU-Based Power Transmission System	1721
<i>Nikhil B Sardar, Priyanshi Agarwal, Anjali Dhakad, Shubham Kumar, Gaurav Vinod Patil, Ram Singh Manoj Tripathy</i>	
Edge-to-Cloud AI Pipelines for IoT Data Streams: Challenges, Frameworks, and Emerging Solutions	1727
<i>Rupesh Dabbir</i>	