

2024 IEEE Silchar Subsection Conference (SILCON 2024)

**Agartala, India
15-17 November 2024**

Pages 1-560



**IEEE Catalog Number: CFP24CB1-POD
ISBN: 979-8-3315-4083-8**

**Copyright © 2024 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:	CFP24CB1-POD
ISBN (Print-On-Demand):	979-8-3315-4083-8
ISBN (Online):	979-8-3315-4082-1

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

TABLE OF CONTENTS

Adversarial Robustness Through Dynamic Ensemble Learning	1
<i>Hetvi Waghela, Jaydip Sen, Sneha Rakshit, Subhasis Dasgupta</i>	
Explorative Deployment of Fine-Tuned Large Language Model for On-Site Computerized Numeric Control Machine Operator Assistance	7
<i>Kanimozhi S, Sriker Ys, Vinod Vasan</i>	
Driver Drowsiness Detection Using Deep Learning	13
<i>Saurabh Kumar Singh, Annappa B., Saraswati Koppad</i>	
Frequency Regulation in Hybrid Power System Using Red-Tailed Hawk Algorithm Based Fractional Order Controllers.....	20
<i>Rajendra K. Pandey, Deepak Kumar Gupta, Amitkumar Vidyakant Jha, Bhargav Appasani, Geetanjali Dei, Sarita Samal</i>	
Electrical Energy Generation from Parabolic Concentrator by Using Thermoelectric Module	26
<i>Naren Das, Diptanu Majumder, Joyashree Das, Abanishwar Chakrabarti, Shailendra Singh, Bikram Das</i>	
Area-Optimized and Low Power Ripple Carry Adder.....	32
<i>Dharsan K, Dineshkumar G, Ramesh S R</i>	
ECG Variations in Diabetes Mellitus Type-2 Patients	37
<i>Arya Bhardwaj, Bala Chakravarthy N., R. Pradeep Kumar, Kunal Pal, J. Sivaraman</i>	
Harnessing the Power of Advanced Deep Learning Algorithms for Foretelling Wind Speed	42
<i>Sarvendra Kumar Singh, Shyama Kant Jha</i>	
An Enhanced Feature Fusion Network Model for Cervical Cancer Prediction	48
<i>B. Pragatheeswari, Jameela Mary, S. Roshni Priya, C. R. Dhivyaa</i>	
Evaluation of GMPP and Mismatch Loss for Recent Hybrid BIPV Array Interconnections Under Medium and Low Non-Uniform Irradiations	54
<i>Debayan Sarkar</i>	
Bird Song Classification Using TinyML and Edge Impulse Tools	60
<i>Urbija Goswami, Anoop Saxena</i>	
Understanding the Impact of News Articles on the Movement of Market Index: A Case on Nifty 50.....	69
<i>Subhasis Dasgupta, Pratik Satpati, Ishika Choudhary, Jaydip Sen</i>	
A Sequential Optimization Ensemble Learning Technique for Lung Cancer Diagnosis	75
<i>Vaibhav Soni, Vishal Kumar, Vijay Bhaskar Semwal</i>	
Real-Time Detection of Sea Urchins Using Convolutional Neural Networks.....	81
<i>Vismaya V Nair, Srinivas Bole, N. Nanthini, Parveen Akhther A</i>	
A Novel Hybrid Gazelle Optimization Algorithm with Differential Evolution for Solving Engineering Design Problem.....	90
<i>Gyan Singh, Saptadeep Biswas, Binanda Maiti, Uttam Kumar Bera</i>	
Securing RISC-V Processor Using Randomized Scan Obfuscation.....	96
<i>Kodepalli Badarinath, N Mohankumar</i>	

Integrating Deep Neural Networks and Digital HRM for Systematic Human-Job Matching and Digital Transformation Strategy	102
<i>S Muthuperumal, Mithun D'Souza, Abbas Thajeel Rhaif Alsahlanee, U. Kavya, Kamila Ibragimova, S. Suma Christal Mary</i>	
Subjective Answer Evaluation Using Keyword Similarity and Regression Techniques	107
<i>Pranav Kapparad</i>	
Enhancing Square Grounding Grid Performance Through Variable Spacing Methods.....	113
<i>Kaushal Pratap Sengar, Kandasamy Chandrasekaran</i>	
DSM Concept-Based Frequency Regulation of Hybrid Power System	119
<i>Smriti Jaiswal, Subhajit Roy, Manas Jyoti Mahanta, Ghoshika Das, Dulal Chandra Das</i>	
A Comparative Study on MCGDM Methods to Find the Best Domain for Women Empowerment in India.....	125
<i>Naima Debbarma, Susmita Roy, Paritosh Bhattacharya</i>	
Optimizing Random Forest Classifier for Detection of Alzheimer's Using OASIS	131
<i>Karri Sai Sanjana Reddy, Kishor Kumar Reddy C., Srinath Doss, Kari Lippert</i>	
Impact of AI-Driven Automation on Job Displacement and Skill Development: A Societal Perspective.....	137
<i>A. Balakumar, Pravin D Sawant, Divya Nimma, Shamim Ahmad Khan, Ayasha Siddiqua, Kalaiarasan C</i>	
Computational Framework for Underwater Surface Modelling Using GPU Accelerated Bathymetric Data Processing.....	142
<i>Sonali Priyadarshini, Dilip Kumar Dalei, Narayan Panigrahi</i>	
Integrating Reinforcement Learning and Language Models to Develop Personalized Mentoring Strategies for Women in STEM.....	147
<i>B Kiran Bala, J Naga Madhuri, Chinmaya Dash, Mohammad Givi Efgivia, Pavan Kumar Nowbattula, S. Suma Christal Mary</i>	
A Review of Opportunities, Challenges and Developments for Application of Two Dimensional, Semiconducting Transition Metal Dichalcogenides in Field Effect Transistors	152
<i>Bidyut Bhattacharjee, Gobinda Pradhan</i>	
Enhancing Smart Grid Resilience by Integrating Machine Learning with Renewable Energy Agent.....	157
<i>Kiran P</i>	
Decentralized Identity Management Using Blockchain for Healthcare Systems	162
<i>Ponni Valavan M, Shahazad Niwazi Qurashi, Farrukh Sobia, Faraj Harahsheh, Suseendran Surendran, S. Suma Christal Mary</i>	
Analyzing Electromagnetic Interference (EMI) in Home Appliances: A Study on Conducted Emissions	168
<i>Akshya M Pardhe, V S Rajguru, Ganesh Khadke, Sarala Adhau</i>	
Heterogeneous Spatio-Spectral-Temporal Image Fusion Using DASCNN for Remote Sensing Applications.....	172
<i>Swathi Nallagachu, R Sandanalakshmi</i>	
Design of Compact Quad Band Circular Slot Microstrip Patch Antenna for S Band, C Band, X Band, and Ku Band Satellite Communication.....	178
<i>Shradha Kumari, Ashraf Hossain</i>	

Improving the Stability of Power System Frequency in Deregulated Environments Using an Artificial Electric Field Algorithm	182
<i>Chandan Kumar Shiva, Vedik Basetti, Sachidananda Sen, Shubhashish Bhakta</i>	
Enhancing the Stability of Power System Frequency Through the Artificial Electric Field Algorithm Assisted by Automatic Generation Control.....	187
<i>Chandan Kumar Shiva, Vedik Basetti, Sachidananda Sen, Shubhashish Bhakta</i>	
Economic and Environmental Analysis of Power System Using Multi-Objective Dragonfly Algorithm	193
<i>Satyaki Dasgupta, Uttara Das, Nabendu Biswas, Sadhan Gope</i>	
Emotional Intelligence and Its Role in Motivation and Stress Management: Insights for Effective Leadership	200
<i>A. Balakumar, S. Mohana, M Sandeep Kumar, Jahnavi M, Kathari Santosh, Prema S</i>	
Universal Gate Design Using Non-Aligned Gate Transistors: A Performance Evaluation in TCAD.....	206
<i>Arun Kumar Sinha, Sri Lakshmi Sangam, Luiz Alberto Pasini Melek</i>	
Chaotic Dynamics of Switched Reluctance Motor Drives: A State-Of-the-Art Review	212
<i>Yaheya Al Aman, N. C. Sahoo</i>	
Development of an IoT Based Automated Hydroponics System for Efficient and Sustainable Indoor Plant Cultivation.....	218
<i>B. Pragathi, P. E. Satyanarayana, Sonu Kumar, A. Sampath Dakshina Murthy, Jami Venkata Suman</i>	
Theoretical Analysis of the PAPR of FBMC Based on Laplace and Gaussian Distributions	223
<i>Srinivas Ramavath, Swati Swayamsiddha, Sarita Nanda, Tapaswini Samant, Dipanjan Dutta, Umesh Chandra Samal</i>	
Outage Performance of Imperfect Hardware Ambient Backscatter Communication Systems.....	229
<i>Mohammad Ali, Pankaj Kumar Sharma</i>	
Multisource Remote Sensing Data Fusion for Enhanced Landslide Detection Using Deep Learning Techniques.....	234
<i>Preeti Sharma, Nikunj Domadiya</i>	
Modified Step Size Least Mean Fourth Algorithm for Artifact Elimination from EEG Signals	240
<i>Sridharreddy Mothe, Sridhar Chintala, Ravichander Janapati, Payal Bhardwaj</i>	
An Efficient Low-Power Rectifier Integrated Antenna for RF Energy Harvesting	245
<i>Geriki Polaiah</i>	
Bayesian Belief Network Analysis for SPAD System in Railways	249
<i>Madhusmita Das, Biju R. Mohan, Ram Mohana Reddy G, Chikkeri Chinmaya, Umesh, Vishwa Mohan Reddy G, Vismay P</i>	
Compact Microstrip Patch Antenna Loaded with Dual Slits for 5G Millimeter-Wave Applications	255
<i>Subhajit Paul, Amit Ranjan Azad, Dalia Nandi</i>	
Load Frequency Control of Integrated Micro-Grid Using TSO Based PID Controller.....	259
<i>Rebecca Lalpamawii, Suman Majumder</i>	
Optimizing Solar MPPT Boost Converter Control: Implementation of a Two-Degree-of-Freedom PID Controller with Ziegler-Nichols and MATLAB Tuning Methods.....	265
<i>Lalthansangi, Krishnarti De</i>	

Reliability Analysis Using Bayesian Belief Network on Drone System: A Case Study.....	271
<i>Madhusmita Das, Biju R. Mohan, Ram Mohana Reddy G, Ekank Chhapparwal, Krishna Kumar K, Sachin Chowdhury, Shivam Sharma</i>	
A Survey on Control Strategies for Stable Operation of Microgrid	277
<i>Shaktipada Sarkar, Arvind Kumar Jain, Rup Narayan Ray, Priyanath Das</i>	
SIMPD Net: A Novel Dataset for South Indian Medicinal Plants in Natural Conditions.....	283
<i>Muthukumar Arunachalam, T. Gopu, Sabari Nathan, K. Uma, V. Srivatsav, M. Thangaraj</i>	
Comparative Investigation of Energy Yield Estimation for Fixed Tilt and Tracked PV System.....	289
<i>Abhishek Arya, Pabitra Kumar Biswas, Avinash Kumar, Debarghya Dutta</i>	
AirAware - Empowering Health Choices and Navigating India's Air Quality Landscape	295
<i>Aadil Shah, Jennifer Thozhuvathinkal, Anusha Gonal, Mayuresh Gujare, Vedant Navani, Pallavi Gangurde</i>	
Safety Analysis of Shutdown System in Nuclear Power Plants Through Petri Nets	300
<i>Madhusmita Das, Biju R. Mohan, Ram Mohana Reddy G, Abhishek, Ashwani Kumar, Prasanna Kumar, Jaheer Khan</i>	
Design and Fabrication of Aluminium Nitride Based Micro Cantilever Sensor for the Detection of Carbon Dioxide	306
<i>Arjun Sunil Rao, Guru Prasad B, Basavaraj S. Sannakashappanavar, Rashmi K R</i>	
Optimization of Spectrum Efficiency of Multiuser Cognitive Radio Network	311
<i>Arobindra Saikia, Ritunjoy Bhuyan, Ashim Jyoti Gogoi</i>	
Second Harmonic Generation in a Parallel Slab with 1-D Photonic Crystal Multilayering	317
<i>Sagar Das, Sumita Deb, Susmita Paul</i>	
Frequency Regulation of Multi-Source Power System Through Aggregated Thermostatically Controlled Loads	322
<i>Sweta Gupta, V S K V Harish, Rajneesh Sharma</i>	
On Importance of Start Transient Current Measurement for Health Monitoring of Aerospace Solenoid Valves	328
<i>P A V Sidhartha, Arnika Verma, Venkata Sunil Sai N, Subrata Chakrabarti, Balaram Sahoo, Alope Kumar</i>	
Implementation of Machine Learning Aided Discrete Meyer Wavelet Decomposition to Identify Overhead Line Insulator Surface Contaminations Based on Leakage Current Signatures.....	333
<i>Kaushik Sit, Swati De, Suhas Deb, Avijit Maity, Sovan Dalai, Subhendu Mondal</i>	
Analyzing Short Gate and Independent Gate Behaviour of a Non-Aligned Double Gate FET in TCAD Environment	339
<i>Arun Kumar Sinha, Sri Lakshmi Sangam</i>	
Control of Cuk Converter Fed Brushless DC Motor Drive System	344
<i>R. Dhanasekar, Aishwari S, L. Vijayaraja, S. Ganesh Kumar, Marco Rivera</i>	
Advanced Speed Control Strategies for Switched Reluctance Motors: A Comprehensive Review	350
<i>Srijani Mukhopadhyay, Swapna Mansani, Sreejith Sekaran</i>	
Modeling Novel Negative Resistance Hyper-FETs Using Neural Regressor Networks	356
<i>Ritika Sorot, Sonam Rewari, Chaudhry Indra Kumar</i>	

Control of a Solar Powered AC Microgrid with Grid Forming and Grid Feeding Converters	360
<i>Moonisa Yousuf, Asadur Rahman, Suriya Sharif</i>	
Neuromorphic Control for Multi-Coil Active Magnetic Bearings.....	366
<i>Debaghya Dutta, Pabitra Kumar Biswas</i>	
Two-Level Image Augmentation with Deep-Learning for Single Sample Face and Ear Recognition	372
<i>Vivek Tomar, Nitin Kumar, Maroti Deshmukh, Maheep Singh</i>	
Optimizing CNNs for Leaf Disease Detection: A Comparative Analysis of Algorithms, Activation Functions, and Performance Metrics	378
<i>Nitisha S, Mohith N, Vinay R, Monika Agarwal, Aparajita Sinha, Mokshitha M</i>	
Tyre Pressure Monitoring System Using FSR and Flexible NFC	384
<i>Abinav Balachandar, Arunrajah S, R. Genga Madesh, Mekaladevi V</i>	
Deep Learning-Based Comparative Study on Multi-Disease Identification in Strawberries	390
<i>Rituja Saha, Azharuddin Shaikh, Anirban Tarafdar, Pinki Majumder, Abhijit Baidya, Uttam Kumar Bera</i>	
Enhancing Multi-Layer Perceptron Training with Prairie Dog Optimizer: Advancing Classification Accuracy in Medical Diagnostics.....	396
<i>Tanzil Debbarma, Azharuddin Shaikh, Anirban Tarafdar, Abhijit Baidya, Pinki Majumder, Uttam Kumar Bera</i>	
Performance Analysis of Proton Exchange Membrane Fuel Cell Using MATLAB.....	402
<i>Kaberi Majumdar, Aditi Datta, Dibakar Bhowmik</i>	
Enhanced Control of Bidirectional Dual Active Bridge Converters Using PI Compensation for Optimized Power Delivery	406
<i>Indranil Kushary, Ranjit Kumar Barai, Tamal Roy</i>	
Multivariate Classification Analysis: Determining Performance Criteria for Different Cultural Heritage	411
<i>Pritha Singha Roy, Vinay Kukreja</i>	
A Comprehensive Analysis on Comparator, Encoder Circuit to Develop Flash Type ADC Based on Different Implementation Routes	416
<i>Indranil Maity, Suvojit Maity, Siddhartha Bhattacharya</i>	
High-Performance Coil Design for Misalignment-Resilient Wireless Power Systems	422
<i>Tushar Debnath, Suman Majumder, Krishnarti De</i>	
Parameter Sizing in Bi-Directional Charging for Compact EVs	428
<i>Sourav Dutta, Suman Majumder, Krishnarti De</i>	
Self-Operated Car Washing System Using Programmable Logic Controllers.....	434
<i>Amit Kumar Roy, Abhilasha Pawar, Udit Mittal, Ashutosh Tripathi, Diwakar Rai, Anshul Singh</i>	
Predictive Modeling of Global Warming Trends Using Machine Learning	439
<i>P. Manikandan, Gollapalli Sri Venkata Naga Mani Teja, Jonnala Srikar, S. Srivasteswar, Iruvuri Sri Vidya, Srungarapu Sri Dharani</i>	
Optimal Power Flow with Hydro-Thermal Scheduling Incorporating Battery Energy Storage System (BESS) Using Driving Training Based Optimization (DTBO).....	444
<i>Adhit Roy, Susanta Dutta, Basudeb Mondal, Anagha Bhattacharya, Soumen Biswas</i>	

Machine Learning Based Monthly Average Load Profiles Forecasting Approach for Distribution System Planning with Distributed Generations	450
<i>Geethika Vnvs, Supraja Nhsvn, Narayana Mvv, Kranthi Plv, Srinivasa Rao Gampa, Mahesh Babu Basam, Preetham Goli</i>	
Quadra-Ring SRR Metamaterials: A Novel Design for Enhancement of Magnetic Field in 1.5T MRI Scans	455
<i>Amit Baran Dey, Jegyasu Gupta, Gulshan Kumar, Subramani Kanagaraj, Ratnajit Bhattacharjee, Debabrata Sikdar</i>	
Tenyidie Syllable-Based Automatic Tone Marker	461
<i>Teisovi Angami, Chenlep Yakha Konyak, Themrichon Tuithung</i>	
Deep Learning Approaches for Identifying AI-Generated Text Via Feature Extraction.....	465
<i>Annepaka Yadagiri, Dimpal Kalita, Abhishek Ranjan, Ashish Kumar Bostan, Parthib Toppo, Partha Pakray</i>	
Video Based Cricket Shot Classification Using Modified LRCN Approach.....	471
<i>Krithiga R, Balaji Ramesh, Sriraam C, Lionel Donato L, Rojesh S</i>	
Lip Reading Detection for Emotion-Infused Health Evaluation	477
<i>Premanand Ghadekar, Siddhesh Shinde, Soham Dixit, Arpit Patil, Rushikesh Sanjekar, Pratik Dhame</i>	
Comparative Analysis of TensorFlow and PyTorch for Image Classification Using CNN with Parallelism Strategies	484
<i>A D Mahit Nandan</i>	
Highly Efficient 2400 Nm SHG in KNbO ₃ Crystal Using TIR-Based ORQPM Technique Controlling the Chirality by External Electric Field.....	490
<i>Moumita Saha, Sumita Deb, Kaushik Das, Hemant Kumar, Arpita Mandal, Upama Das</i>	
Optimization and Analysis of a Wireless Power Transfer System for EV Applications.....	495
<i>Ajay Kumar, Saket Kumar, Sanjay Kumar, Umashree</i>	
Association Rule Based Undersampling Technique for Addressing Imbalanced Classification	501
<i>Zahid Ahmed, Sufal Das</i>	
Performance Evaluation of Regularized ANN Classifier to Identify Power Quality Disturbances	507
<i>Jayanarayanan Unny V K, K C Sindhu Thampatty</i>	
MOOC Learner Performance Prediction with CNN-LSTM Mechanism	513
<i>I Infant Raj, Pavani G, Tushar Dhar Shukla, V Arunadevi, P Kavitha, Prasanta Parida</i>	
Effect of High-K Dielectric Material on TG n-FinFET to Minimize the Short Channel Effects (SCEs)	518
<i>Jeetendra Kumar, Shilpi Birla, Garima Agarwal</i>	
CNN Based Real-Time Embedded System for Multi-Class Cardiac Arrhythmia Detection.....	523
<i>Soumen Maity, Manas Rakshit</i>	
Educational Quality in Teaching Magnetism Using Dedicated Mobile Devices.....	528
<i>Christian Junta, José Varela-Aldás, Washington Collay, David Rivas-Lalaleo, Guillermo Palacios-Navarro</i>	
High Gain Hexagonal Patch Antenna Array for Satellite Application.....	534
<i>Debadrita Saha, Ajay Kumar Choudhary, Tamasi Moyra</i>	

A Time-Based Secured Framework for Key-Exchange Between Trusted Parties: Quantum-Key Distribution Protocol	538
<i>Bindu Madavi K P, Krishna Sowjanya K, Neha Patwari, Shobharani D A</i>	
Exploring Fe/S-Doped TiO ₂ as ETL Using DFT Extracted Parameters in Lead-Free Perovskite Solar Cells	544
<i>Shubham Pandey, Diwakar Pandey, Praveen Kumar Sahu, Abhishek A. Hembrom</i>	
A Comparative Analysis of Brain Tumor Classification Using Different Transfer Learning Models	549
<i>Harsh Bardhan Karna, Debabrata Dash Dipta, Bidipta Datta, Vipin Chandra Pal</i>	
Prediction of Air Pollution Using Advanced Machine Learning Techniques	555
<i>Rabin Bhaumik, Shawli Bardhan, Sukanta Roga, Swapan Debbarma</i>	
An Application of Hugging-Face Model for Exegesis of the Shlokas from Sanskrit to Bengali.....	561
<i>Amritesu Pal, Sanjay Chatterji</i>	
Visualization and Interpretation of Lithium Iron Phosphate Cell Variable Characteristics by Adapting Python Data Science Packages	567
<i>P. Keren Persis, R. Geetha</i>	
Advanced Intelligent Systems for Optimizing Breast Cancer Thermography.....	573
<i>T. Deepa, S. Maragathasundari, M. Kameswari, Josephine Selle Jeyannathan</i>	
Performance Evaluation of Electrical Distribution System Implementing Revamped Distribution Sector Scheme (RDSS).....	579
<i>Showkeen Ahmad, Asadur Rahman, Ahras Hassan Moon</i>	
Federated Learning Based Privacy Preserving for Brain Tumor Detection.....	585
<i>Hema Priya Natarajan, Shymalagowri S, Dharaneesh Ckv, Pushparaj A, Krithik Ram B</i>	
An Intelligent Solution to Fractional Order Controller Tuning Problem Using Whale Optimization Method	591
<i>Sayan Kundu, Mahadeb Soo, Soumadip Chatterjee, Soham Dey</i>	
Target Presence Detection Using SAM and Just One Example.....	597
<i>Kanishk Awadhiya, Sudipan Saha</i>	
2-Level BDC for Grid-to-Vehicle (G2V) and Vehicle-to-Grid (V2G) Power Transfer	602
<i>G. Keerthana, Diptanu Majumder, Dipankar Sutradhar, Bikram Das, Abanishwar Chakrabarti, Prabir R. Kasari</i>	
Evaluation of DPS & DGS Implementation on Patch Antenna Performance with Truncation and Striplines.....	608
<i>Sanket Sarangi, Naresh Chandra Naik</i>	
Optimizing 3D U-Net for Brain MRI Segmentation: MARCOS and MAIRCA-Based Hyperparameter Tuning.....	614
<i>Priti Gupta, Anirban Tarafdar, Tanmay Basu, Azharuddin Shaikh, Paritosh Bhattacharya</i>	
Preliminary Analysis of Physiological Signals in Relation to Early Indication of Paralysis Disorder Using Neural Network Approach	620
<i>Vijay Kumar, Sachin Gupta</i>	
Selection of Electric Power Wheel Chair Using Intuitionistic Fuzzy Aggregation Operator Based MCGDM	625
<i>Mampi Debnath, Debasish Bhattacharya</i>	

Smart Waste Segregation System	631
<i>Afaque Wasim, Ashutosh Singh, Sahil Kumar Azamery, Nishant Kumar, Anirban Mishra, Aman Sanghi, Pallavi Verma</i>	
Cardio-Mechanical Signal Based Respiration Monitoring with an Inertial Measurement Unit	635
<i>Sumit Singha, Moirangthem James Singh, L. N. Sharma, Samarendra Dandapat</i>	
Underwater Wireless Sensor Networks: Broadcast Overhead Mitigation for Energy Efficient Routing	641
<i>R. Nantha Kumar, S. Tamilselvan</i>	
Developing Quality Assurance Frameworks for Image Generation Models	647
<i>A. Anitha, Sudha Senthilkumar, Harshal Janjani, Suteerth Subramaniam, Pranal Prasad Dongare, Tushar Madaan, Pratham Gupta</i>	
MOS Transistor-Based Memristor Emulator for Realization of Universal Logic Gates	653
<i>Debalina Roy Choudhury, Ashish Dhakar, Rajneesh Chaurasiya, Goutam Kumar Gupta</i>	
Approximate Modular Multipliers for R-LWE Cryptosystems on FPGAs and ASICs	658
<i>Sahil Maurya, Babita Jajodia</i>	
Transformative Approaches in Landslide Detection-Synergizing Cutting-Edge Deep Learning Models with Optimal Fusion Strategies	664
<i>Saimirra R, R Srivats, Deepika Roselind Johnson, Muskaan Siddiqui, Abhiram Sharma</i>	
Higher Order Filter and FrFT Based ECG Signal Analysis.....	670
<i>Varun Gupta, Rajiv Kumar, Mohit Sharma, Arvind Kumar Sharma, Anshu Gupta</i>	
Investigation of T-Gate AlGaIn/GaN HEMT for Biosensing Application and Sensitivity Optimization.....	675
<i>Nudrat Sufiyan, Anup Kumar Sharma</i>	
Design of Optimized IDC Loaded CSRR Sensor for Detection of Adulteration in Edible Oils.....	681
<i>Aishik Paul, Annesha Mazumder, Mousiki Kar</i>	
A Hybrid MPPT Technique Using Regression Machine Learning and P&O Algorithm for Solar PV Systems Under Partial Shading	686
<i>P. Venkata Mahesh, S. Meyyappan, Ramakoteswara Rao Alla</i>	
Multilayer Complementary Frequency Selective Surfaces with Hybrid Functionality	692
<i>Pooja Prakash, Bidisha Dasgupta</i>	
QDNN-IDS: Quantized Deep Neural Network Based Computational Strategy for Intrusion Detection in IoT.....	697
<i>N. D. Patel, V. Sudarsan Rao, Ajeet Singh</i>	
Pulse Transformer Based Portable Transcutaneous Electrical Nerve Stimulator for Pain Management	704
<i>Ravikiran Rao M, Suryanarayana K</i>	
Attack Category and Malicious Activity Detection Automation on Network Traffic Data Using Recurrent Shallow Learning Architecture	710
<i>Vikas Tiwari, Yogendra Lanje, Ajeet Singh</i>	
Framework for Recognition and Localization Methods for Object Manipulation Through Robotic Systems.....	717
<i>Agam Srivastava, Aryaman Chandra, Biji C. L., G. Kalairassan, Dheeba G.</i>	

An Early Diagnosis of Alzheimer's Disease (AD) on MRI Images Based on Deep Learning Technique	723
<i>Himanshu Sinha</i>	
Implementation and Evaluation of MTPA Control Strategy for PMSMs Via Ansys Machine Toolkit.....	732
<i>Anand Sonkuwar, Vijaya Rajguru, Sarala Adhau</i>	
Optimized Simultaneous Identification and Thermal Regulation for Industrial Pyrolytic Furnaces Using MATLAB and Atmel Microcontrollers	738
<i>Shaktipada Sarkar, Samar Bhattacharya, Arvind Kumar Jain</i>	
Power to X: A Carbon-Neutrality for Coming World	744
<i>Uttara Das, Champa Nandi</i>	
Development and Benchmark Analysis of a Birdcage-Based Volume Coil for Dedicated Knee Scanning at 1.5T	749
<i>Gulshan Kumar, Amit Baran Dey, Jegyasu Gupta, Subramani Kanagaraj, Ratnajit Bhattacharjee, Debabrata Sikdar</i>	
Performance Analysis of a DC-DC Buck/Boost Power Converter for Energy Flow in Grid-to-Vehicle Systems.....	755
<i>Madhur Chauhan, Suman Majumder, Krishnarti De, Sadhan Gope</i>	
Stabilization and Synchronization of Discrete-Time Nonlinear Systems Using Output Feedback Control.....	761
<i>Ravi Kumar Ranjan, Bharat Bhushan Sharma</i>	
Density-Based Clustering with Direction-Aware Distance for Vision Sensing-Based Walking Stick Detection in Collaborative Robotics.....	767
<i>Reeju Bhattacharya, Pritam Paral</i>	
Intelligent Charging Scheduling Management System for Optimal Electric Vehicle Allocation in an Uncertain Spatiotemporal Environment	773
<i>Sourav Das, Aniruddha Bhattacharya, Parimal Acharjee</i>	
Determination of Optimum Capacity Commitment of Battery Energy Storage in Microgrid Operation Using AEFA.....	779
<i>Sukriti Patty, Tanmoy Malakar</i>	
Enhancing Elephant Emotion Detection Using YOLOv5, YOLOv8, and YOLOv9: A Study on Performance and Explainability	785
<i>Rubiya Subair, Shajulin Benedict</i>	
Intelligent IoT System for Continuous Water Quality Monitoring	791
<i>Purnendu Mandal, Alak Roy, Harjeet Nath, Mainak Dhar</i>	
Low Voltage, Wide Dynamic Range Gm-Boosting Current Mirror for High Performance Application	796
<i>Astha Dadheech, Nikhil Raj, Divyang Rawal</i>	
Advanced YOLOv8 with CBAM and BiFPN for Assessing Coral Health in Underwater Environments.....	802
<i>Doneela Das, Koena Mukherjee</i>	
Modelling of 7-Segment Hex Decoder Using Silicon Microring Resonator	808
<i>Kommisetti Murthy Raju, Nirmala Bai K. S, Bikas Mondal, Bhaskar Roy, Sudipta Banerjee, Sumanta Kundu</i>	

VOiCE: Voter Opinion in Community Exploration - a Case Study of Indian Elections	812
<i>Amartya Chakraborty, M. Mahabub A. Khoda, Subhankar Naskar, Nandini Mukherjee</i>	
Topologically Protected Edge States in Valley Photonic Crystals for Terahertz Waveguiding.....	818
<i>Dibaskar Biswas, Manprita Sarma, Sourodipto Das, Debabrata Sikdar</i>	
A Decade of Stock Data: Predictive Modelling with Hybrid CNN-BiLSTM Technique	823
<i>Neha Solanki, Manoj Jha</i>	
FRCD: Future Ready Career-Duck a Machine Learning-Driven Career Guidance for Students	829
<i>Priyanshu Paritosh, Vedant Yadav, Dev Gupta, Ujjwal Biswas</i>	
YOLOv8-Based Real Time Fish Detection and Classification Using Indigenous Bangladesh Fish and Its Comparison.....	835
<i>Rahash Nathasarma, Biswatosh Mazumdar, Binoy Krishna Roy</i>	
Blockchain-Enabled Secure and Fair Online Lottery Systems Using Smart Contracts.....	841
<i>Suseta Datta, Rituparna Mondal, Rajdeep Roy, Sourav Banerjee, Utpal Biswas</i>	
XGBoost for Novel Predictive Model to Classify Student Performance Based on Academic Metrics	847
<i>Sweta Sinha, Om Prakash Singh, Hemanta Baruah, Ujjwal Biswas</i>	
Optimum Power Dispatch Based Approach to Assess HVDC Converter Performance Under Varied Operating Conditions.....	853
<i>Chintan Dalsukh Patel, Tanmoy Malakar, Sreejith S.</i>	
Design and Analysis of a Novel Transformer Less Non-Isolated Bi-Directional DC-DC Converter for Applications in Isolated DC Microgrids	859
<i>Hemant Kumar Verma, Uliya Mitra, Ankur Kumar Gupta, Rashmi Mishra, Ritu Bhoi</i>	
Design of Photonic Crystal-Based Micro Ring Resonator Using Topological Interface State & All Optical and Logic Gates Using Kerr Effect.....	865
<i>Dhiraj Kumar, Jayanta Kumar Rakshit, Arka Roy Bin</i>	
Enhancing AES Security and Performance: A Novel 8-Bit Architecture with Unique Key Expansion for IoT Applications	869
<i>R. Sudharshan, Yogesh P, A. Prathiba</i>	
High-Efficiency PCBM/AgCdF ₃ /CuI Perovskite Solar Cells: Impact of Interface Defect Management on Performance Metrics.....	875
<i>Aniket Verma, Nikhil Shrivastav, Jaya Madan</i>	
Petal Copter Used to Drop Flowers on Honoured Guests During Formal Occasions	880
<i>Ayisha Firdos Mohammad, Vimala Kumari J, Sravya Katam, Venkateswara Rao Bathina</i>	
Machine Learning Based State Prognosis and Performance Assessment of Lithium-Ion Battery.....	886
<i>Kanchan Yadav, Sanjay Maurya</i>	
Detection of Faults During Power Swing Using Weighted-KNN	891
<i>Soumesh Chatterjee, Prabhat Kumar, Biman Kumar Saha Roy</i>	
Design of Acoustic 4×2 Encoder Using Phononic Crystal Based Single Ring Resonator	896
<i>Arka Roy Bin, Jayanta Kumar Rakshit, Dhiraj Kumar</i>	
Empowering Soil Science: Harnessing the Potential of Deep Learning for Accurate Soil Classification	900
<i>Sudipta Dash, Aakanksha Sharaff</i>	

AI Powered Agriculture Optimization Chatbot Using RAG and GenAI.....	906
<i>Mangesh Balpande, Kalparatna Mahajan, Jayesh Bhandarkar, Gaurav Borse, Sagar Badjate</i>	
Quality Estimation of Indian Chili Using Affordable IoT-Enhanced Image Processing	912
<i>Subhojit Malik, Subhajit Roy, Foyjun De, Rahul Rakshit, Ganga Roy, Soumyadip Mukhopadhyay</i>	
Analysis of Battery Degradation Impact on Planning and Operation of Grid-Connected Home Energy System.....	918
<i>Surajit Sannigrahi, Sriparna Roy Ghatak, Parimal Acharjee</i>	
Identifying an Efficient Denoising Method for Threshold-Based Segmentation of Mammograms	924
<i>Ranjan K. Pradhan, Pralipita Mallick, Satabdi Mishra</i>	
A Novel Approach for Detecting Islanding Using Machine Learning Technique	929
<i>Appurva Rajendra Kapil, Kumaresh Pal, Subhadip Goswami, Pranendu Manna, Bumba Nandy, Priyanka Sujit Wani</i>	
Personalized English Grammar Correction Systems Using Deep Neural Networks	935
<i>Sankari V, Sreela B, A Chrispin Antonieta Dhivya, Sana Sarwar, Gulnaz Fatma, Mohd Faraz Hasan</i>	
PerceptiGuard: Unveiling DeepFakes Through Enhanced Media Perception	941
<i>Sheetal Phatangare, Om Tekade, Prathamesh Thakare, Abhishek Wankhade, Purva Wankhade</i>	
Enhanced Convolution Neural Network with Optimized Pooling and Hyperparameter Tuning for Network Intrusion Detection	947
<i>Sourav Patel, Supriya Bharat Wakchaure, Ayush Kumar Sharma, Abirami S</i>	
High-Speed Flash ADCs with Enhanced Power Efficiency: An ECRL Adiabatic Sub Threshold CMOS Inverter Approach.....	953
<i>G B Christina, M M Prasad Reddy, B. Nancharaiiah</i>	
Aerial Image Segmentation Using YOLO V8 and SAM Pipeline.....	960
<i>Karthik K Pai, Monika Agarwal, Aparajita Sinha, Mary Jasmine, Jagrath Chengappa K N</i>	
An Innovative Approach Towards Efficient Diabetes Mellitus Prediction Using Federated Forest.....	966
<i>Gifsy Madhu, Anurag De, Gautam Pal</i>	
Robust and Adaptive PID Control Synthesis Based on Radial Basis Function Approach for Unmanned Aerial System	972
<i>Parul Priya, Sushma S Kamlu</i>	
Development and Evaluation of a Support Bot for College Activities and Placements Using Fine-Tuned Quantized Large Language Models	980
<i>Vikas Nandeshwar, Sarvadnya Bhatlawande, Safalya Satpute, Shivan Satao, Atharv Saste, Harsh Sathe, Saumya Gaikwad</i>	
Study of Electrical Characteristics with Different Channel Lengths of Bottom Gate Oxide Semiconductor Based Thin Film Transistor	986
<i>Basavaraj S. Sannakashappanavar, Arjun Sunil Rao, Aniruddh Bahadur Yadav, Shreyansh Khatri, Rahul Garg, Kumar Prabhat</i>	
Optimizing BLDC Motor Design for EVs Using Pole-Slot Configuration Analysis	992
<i>Rajesh Kumhar, Tarkesh Kumar Mahato, Subhajit Roy, Poonam Lakra, Babli Kumari</i>	

Advancing AI: Deep Learning Techniques for Handwritten Digit Recognition.....	998
<i>Ameya Gohad, Dev Chadawala, Poorva Agrawal, Gopal Kumar Gupta, Uma Yadav, Ajit K. Singh</i>	
Transforming High-Speed Train Communication with Intelligent Reflecting Surfaces: A Comprehensive Review	1004
<i>Swastika Das, Shikha Maurya, Rahul Pal</i>	
Simulation and Testing of D60 for Under Voltage, Over Voltage and Instantaneous Over Current Faults	1010
<i>Arumuru Guru Mohana Prasada Rao, Bindu Vadlamudi, Venkateswara Rao Bathina</i>	
Res2-UNeXt Combined with Federated Learning for Cyber-Attack Detection and Classification in Multi Area Smart Grid Power System	1016
<i>Jasper J, Praveen B. M, Berlin Shaheema S</i>	
Electric Vehicle Production: A Comprehensive Study of Environmental and Water Resource Impacts	1022
<i>Kumar Amitabh, Suman Majumder, Krishnarti De, Bikram Das</i>	
Diabetes Prediction Using Machine Learning	1027
<i>Mayank Jichkar, Ritesh Shende, Om Bonde, Poorva Agrawal, Gopal Kumar Gupta, Ajit K. Singh</i>	
Utilization of Image Processing Tools for a Comparative Study on RGB and HSV Color Space: Targeting Feature Extraction of Banana Fruit Image During Different Ripeness Stages	1033
<i>Indranil Maity, Sudip Samanta</i>	
Stock Price Prediction Using Recurrent Neural Networks and Genetic Algorithm.....	1039
<i>Chirag Choudhury, Kapil Ali, Shubhamoy Chanda, Mozaharul Islam, Wangjam Niranjana Singh</i>	
Predictive Modeling of Dermatological Descriptors	1045
<i>Sreya Sunil, Kamal Bijlani, Sachin Gupta</i>	
Design and Development of River Health Monitoring System Using Arduino UNO	1051
<i>Juned Kazi, Kishor Mane, Yusuf Kalsekar, Zainulabidin Hamdoley, Manish Kadam, Siddhant Chikane</i>	
An Optimized Full Adder Utilizing a Three-Input XOR Gate in QCA Technology.....	1056
<i>Munmun Das, Jayanta Pal</i>	
Smart Waste Management System Using IoT	1062
<i>Mainak Dhar, Alak Roy, Purnendu Mandal</i>	
Reliable Power Flow Management and Control in Solar PV Based Electric Vehicle Charging System with G2V and V2G Integration.....	1068
<i>Malle Lingamaiah, Arvind Mittal, Shailendra Kumar</i>	
An Enhanced of Grey Wolf Optimization Algorithm for Feature Selection of Medical Datasets	1074
<i>Subrata Majumder, Swanirbhar Majumder, Sanjoy Chakraborty, Apu Kumar Saha</i>	
Design of a Multi-Band Printed Yagi-Uda Antenna for CubeSat Communication.....	1078
<i>Kajal Sinha, Sayan Chowdhury, Gobinda Sen</i>	
DevOps Automation Pipeline Deployment with IaC (Infrastructure as Code).....	1082
<i>Adarsh Saxena, Sudhakar Singh, Shiv Prakash, Tiansheng Yang, Rajkumar Singh Rathore</i>	

Design and Analysis of UAV for Efficient Water Payload Transport: A 4-Liter Capacity Study	1088
<i>Satyam Singh, Vedant Hambire, Dipshikha Hazari, Harsh Yadav</i>	
Improving Liver Disease Diagnosis Through Generative Adversarial Network Driven Synthetic Tabular Data	1094
<i>Mahendran. S, Venkatasekhar. D, Shanmugasundaram. G</i>	
Advanced Error Characterization and Polynomial Calibration of Soil Moisture Sensors: A Comprehensive Comparative Study	1100
<i>Adrija Das, Anushka Bhandari, Goshidhaa M. S., R. Karthika, Soubhik Bagchi, Pritam Bhowmik</i>	
Reliability-Driven Strategic Allocation of Renewable Integrated EV Charging Infrastructure in Radial Distribution System.....	1105
<i>Raj Chakraborty, Priyanath Das, Diptanu Das, Punam Das, Sadhan Gope, Arup Ratan Bhowmik</i>	
Optimized Switching Angle Control Using Newton-Raphson Method for THD Reduction in Cascaded H-Bridge Multilevel Inverters	1111
<i>Sangita Das Biswas, Bikram Das, Champa Nandi</i>	
Effective Prosumer Placement Strategies in Radial Distribution Network	1117
<i>Punam Das, Sadhan Gope, Diptanu Das, Raj Chakraborty, Arup Ratan Bhowmik, Joyashree Das</i>	
Real-Life Performance of a Retro-Fitted Plugin Hybrid Electric Two-Wheeler	1123
<i>Sagar Mallik, Raj Chakraborty, Priyanath Das, Sharmistha Sharma</i>	
Augmenting Sensor Driven AI Assistive Technologies for Non-Verbal Communication in Paralyzed Patients	1129
<i>Balaji Shesharao Ingole, Aditya R. Chandre, Manjunatha Sughaturu Krishnappa, Vivekananda Jayaram, Darshan Mohan Bidkar, Rohit Shesharao Talegaonkar</i>	
Brain-Inspired Encryption Techniques for Medical Imaging	1134
<i>Shanu Khare, Navjot Singh Talwandi, Payal Thakur, Rakesh Thakur, Bhavana Bansal, Kalpana Singh</i>	
Satellite Communication Vulnerabilities and Threat Landscape	1140
<i>Shanu Khare, Navjot Singh Talwandi</i>	

Author Index