

# **2024 1st International Conference on Electrical, Computer, Telecommunication and Energy Technologies (ECTE-Tech 2024)**

**Oum El Bouaghi, Algeria  
17-18 December 2024**



**IEEE Catalog Number: CFP24VG1-POD  
ISBN: 979-8-3503-8849-7**

**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:    | CFP24VG1-POD      |
| ISBN (Print-On-Demand): | 979-8-3503-8849-7 |
| ISBN (Online):          | 979-8-3503-8848-0 |

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Talbe of Content

|                                                                                                                     |     |
|---------------------------------------------------------------------------------------------------------------------|-----|
| Improving Resource Security by Integrating Authentication and Cryptography                                          | 1   |
| Improved Neural Network Model Predictive Control based on DTBO algorithm: Applied to Manipulator Robot              | 9   |
| Long-Term Forecasting of Hydrocarbon Products Sales                                                                 | 15  |
| Contextual Influence on Learning Styles: A VARK and Tensor-Based Approach for Adaptive Pervasive Learning           | 21  |
| A comprehensive comparison of CNN-based deep learning architectures for fingerprint authentication                  | 29  |
| Mobility Management of heterogeneous network in restricted areas                                                    | 35  |
| Securing Disaster Management Systems: A Comparative Study of ML and DL-Based IDS for Mirai Botnet Detection         | 43  |
| Design of Compact Inverted C-Shaped Antenna with Dual-Band for WLAN Applications                                    | 51  |
| Experimental Test Bench for Power Quality Enhancement using Direct Current Control based on Fuzzy PI Controller     | 56  |
| Transfer learning-based diagnosis of breast cancer                                                                  | 62  |
| Leveraging Large Language Models for Base Station in Telecommunications                                             | 68  |
| Impact of Photovoltaic Module Aging and Component Degradation on Total Harmonic Distortion in Standalone PV Systems | 76  |
| S2SCAF-BNRA: Sequence to Sequence based approach for cyber-attack forecasting with Bayesian network decision-making | 82  |
| Real-Time Speed Control of DC Gear-Motor Using PID controller and Sliding Mode Control for Robotics                 | 89  |
| Advancing Road Safety: A CNN-Based Semi-Supervised Learning Approach for Drivers' Drowsiness Detection              | 96  |
| Experimental Evaluation of Monocular Vision-Based Obstacle Detection Methods                                        | 102 |
| Cloud anomaly detection Strategy with a Hybrid Approach: Evaluation and Future Improvements                         | 108 |
| Hybrid Passivity-based Current Controller Design for Electric Vehicles                                              | 115 |
| Atrous-Ghost Module in Half-UNet for Segmenting Retinal Vessels in Fundus Images                                    | 121 |
| Optimizing Elliptical Probe-Fed and Edge-Fed Antennas for Radar Applications Using a Two-Stage ANN Model            | 128 |
| Multi-Agent Deep Reinforcement Learning Applications in Cybersecurity: challenges and perspectives                  | 133 |
| Robustness Analysis of Transmission Errors in Multi-View HEVC: Propagation Dynamics and Mitigation Strategies       | 139 |
| The integration of MATLAB/Simulink and Virtuino IoT for an automated watering system                                | 146 |
| Feature extraction for pneumonia diagnosis using conventional methods                                               | 153 |
| Transfer Learning and Object Detection for Improved Date Fruit Pest Recognition                                     | 159 |
| Enhanced Sensitivity in IR GeSn Thin-Film based Phototransistors By Using                                           | 167 |

|                                                                                                                                      |     |
|--------------------------------------------------------------------------------------------------------------------------------------|-----|
| a Gaussian Doping Profile                                                                                                            |     |
| An Evolutionary Large Language Model for Hallucination Mitigation                                                                    | 171 |
| Advanced Voltage Control Techniques for Three- Phase Inverter with RLC Filter: Comparative Study of MPC and HB-PWM Methods           | 179 |
| PSO and SLPSO to Improve the SVM with RBF Kernel for the Diagnosis of Power Transformer Oil by DGA                                   | 185 |
| A Decision Tree Model For Inset-Fed Microstrip Patch Antenna                                                                         | 189 |
| Analyzing The Performance Of Semantic Segmentation Techniques In Automatic Corrosion Detection                                       | 194 |
| Sparse Representation-Based Classification for Enhanced Biometric System Reliability                                                 | 200 |
| Pyramidal sun sensor calibration via dichotomy method                                                                                | 206 |
| Transformative Role of IoT and AI in Health monitoring systems: A Systematic Mapping Review                                          | 211 |
| Hybrid Machine Learning Approaches For Classification DDoS Attack                                                                    | 219 |
| High-Speed FPGA Implementation of Modular Multiplication over Prime Field                                                            | 226 |
| An Efficient Design and FPGA Implementation of a Hyper-chaotic and Deep Learning Based PRNG For Image Security Application           | 232 |
| Optimizing Service Selection in Flying Ad Hoc Networks at the Mobile Edge Computing Level                                            | 238 |
| A Novle Junctionless 4H-SiC Trench MOSFET with Improved Switching and Self-heating Performances                                      | 246 |
| Removing Non-Invasive Brain Stimulation Artifacts via Joint Blind Source Separation                                                  | 252 |
| Effects of Power Supply Phase Imbalance on the Electrical and Mechanical Performance of Induction Motor                              | 259 |
| Improved Ensemble-Based Approaches with Stacking for Imbalanced Medical Data Classification                                          | 263 |
| The Effect of Cd on the structural and optical properties of ZnMgO for ultraviolet photodetector applications                        | 271 |
| Scalable Data Storage in the Cloud: Securing Data with Optimized S-boxes via Genetic Algorithms                                      | 276 |
| Artificial Neural Network Model Analysis of Tunable annular-ring microstrip Patch Antenna                                            | 284 |
| EDCOPA Protocol: Addressing Scalability, High-Density and Load Balancing Challenges in WSN-based IoT                                 | 289 |
| Comparison of CNN Model with Different Machine Learning Models for Fake News Detection                                               | 297 |
| Decision Tree with Whale Optimization Algorithm (DT-WOA) for QoS-based IoT Service Composition                                       | 302 |
| A Wide Bandwidth 4×4 MIMO Microstrip Antenna with High Gain and Isolation Operating at 38 GHz                                        | 309 |
| Nonlinear Synergetic Control of Circulating Currents in Parallel Three-Phase Inverters for Power Induction Motor Drive               | 314 |
| Hybrid Renewable Energy System Control Comprising Wind Turbine System, Photovoltaic Panels System, And Battery Energy Storage System | 320 |
| Modeling of a Hybrid Thermal Photovoltaic Collector (PVT) Based on Thin                                                              | 327 |

|                                                                                                                           |     |
|---------------------------------------------------------------------------------------------------------------------------|-----|
| Film Solar Cells Based on CIS                                                                                             |     |
| Arabic Offensive Language Detection Based on Zero-shot Prompting LLM in Social Media                                      | 332 |
| A GAN-LSTM Architecture for ECG anomaly detection                                                                         | 337 |
| Computer-aided diagnosis of multiple sclerosis disease using a deep learning approach in a novel MRI dataset              | 345 |
| RSU deployment to enhance the network connectivity and minimize the incident response time -comparative study-            | 353 |
| Analysis and Design of Wideband Vivaldi Antenna for 5G Applications                                                       | 359 |
| Techno-Economic Feasibility Analysis of a Hybrid Renewable Energy Systems for an Agri-food Industrial Facility in Algeria | 364 |
| Compact UWB high gain microstrip Log Periodic Dipole Array antenna                                                        | 370 |
| A New Efficient ADE-CN-RBF Collocation Meshless Method for Wave Propagation in General Dispersive Meduims                 | 374 |
| Analysis of Mobile Network Data using Unsupervised Learning                                                               | 378 |
| Identifying AI-Written Text in Academia: A Machine Learning-Based Framework                                               | 386 |

---