2025 17th International Conference on Electronics, Computers and Artificial Intelligence (ECAI 2025)

Targoviste, Romania
26-27 June 2025

Pages 1-601

IEEE Catalog Number: CFP2527U-POD
ISBN: 979-8-3315-1046-6

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

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

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

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

IEEE Catalog Number:	CFP2527U-POD
ISBN (Print-On-Demand):	979-8-3315-1046-6
ISBN (Online):	979-8-3315-3352-6
ISSN:	2378-7147

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

The Role of Technology in Mediating and Moderating the Relationship between Academic Pressure and Mental Health 1
Irugu Chandana and Thaya Madhavi

Smart elections: Can artificial intelligence influence voter behavior? 7
Andra Nicoleta Puran and Andreea Elena Tabacu

The Evolution of Blockchain Security and Examining Machine Learning's Impact on Ethereum Fraud Detection 14
Gopichand Bandarupalli

End-to-End Spoken Language Recognition using Self-Attention Speech Models 20
H.Hakan Kilinc, Hasan Kilimci and Zeynep Hilal Kilimci

Automated Washroom and Monitoring System: IoT- Driven Hygiene Management for University Facilities 27
Sukhman Singh, Robin Kumar and Gourav Rana

A Hybrid Technique based on Fusion of Bat Algorithm (BA) - Grey Wolf Optimizer (GWO) - Deep CNN for Classification of Military Ground Vehicles in SAR Aerial Imagery 35
Liviu Rujan and Victor-Emil Neagoe

Development of a Methodology for Evaluating the Stress and Strain Fields in the Elastic Domain through Finite Element Modeling of a Non-Standard Mechanical Loading Test ... 41
Denisa Toma, Nicu Bizon, Alexandru Nitu, Vasile Radu, Alexandru Toma, Alexandra Jinga, Viorel Ionescu, Larisa Popescu and Sebastian Dragusin

Global Path Planning for UAVs Using a Simplified Visibility Graph with Obstacle Merging 49
Dang Khoa Do and Minh Hieu Tran Van

Multi-Version YOLO-Based Inventory Detection for Automated Facility Management 55
Elif Seray Bilgin and Zeynep Hilal Kilimci

XIMR-Net: A Robust Deep Learning Model for Automated Lemon Leaf Disease Classification 62
Isha Das, Amit Saha, Md. Abdulla-Hil-Kafi, Md. Minhajul Hayat Mim, Chinmoy Bhowmik Utsha, Chonchal Khan and Md. Alif Sheakh

Hydrogen-Oriented Cost-Aware Dispatch Modeling Of RES-Coupling Systems Under Stepped Carbon Trading Constraints 71
Hossein Shayeghi, Babak Mohamadi, Peman Zare and Nicu Bizon

Designing a Smart Device for Personal Assistance based on Artificial Intelligence 78
Constantin-Valentin Dănescu, Florentina Magda Enescu, Nicu Bizon, Ștefania-Alexandra Sebe and Mihai Selea

Intersection of pre-trained deep model and Vision Transformer for face spoof detection ... 88
Bharti Thakur, Arvind Selwal and Ambreen Sabha

Smart Over-Temperature Protection Connector For DC Electrical Circuits 95
Emanuel-Valentin Buică, Andrei Militaru, Horia Leonard Andrei, Isabela Elena Bănescu, Liviu Olteanu and Mihăiță Nicolae Ardeleanu

Novel Integral Continuous Sliding Mode Control Design for Robust Speed Regulation of PMS Motors 101
El-Houssine Bekkour, Zakariae Sakhri, Badre Bossoufi, Youness El Mourabit and Safae Merzouk

A STUDY ON EFFECTIVENESS OF TECHNOLOGICAL ADVANCEMENTS ON HUMAN RESOURSE PRACTICES IN SELECTED IT FIRMS 107
Gollapalli Vasundhara and Thaya Madhavi

Innovations in Energy Sustainability: An Ecological Approach to Refrigeration 113
Adriana-Andrada Ciorobea, Florentina Magda Enescu, Nicu Bizon, Sebastian-Alexandru Dragusin, Diana-Ioana Popa, Iulia-Mariana Manuca, George-Razvan Manuca, Arthur Negosanu and Andrei-Alexandru Besliu-Gherghescu

Internal Model Control for Efficient Power and Current Management in Grid-Tied VSIs .. 124
Ersan Kabalci and Volker Staudt

Integrating Digitalization and Artificial Intelligence in Urban Transport: Regulatory Challenges and Smart City Initiatives 132
Amelia-Veronica Gheoculescu and Andrei Soare

Secure Embedding of Sensitive Identity Data in Surveillance Videos using Steganography . 139
Miruna-Mihaela Modiga, Stefania Loredana Nita and Stefan-Ciprian Arseni

Study on the Development of an Application for Ultrasonic Microscanning of Metal Samples in Demineralized Water 145
Popescu Larisa, Bizon Nicu, Radu Vasile, Nitu Alexandru Ionut, Toma Denisa, Ionescu Viorel and Jinga Alexandra

Digital versus Traditional Instruments in the Practice of Legal Professions: An Overview of the Lawyer and Public Notary Professions 154
Lavinia-Mihaela Vlădilă, Ilioara Genoiu, Manuela-Luminița Niță and Olivian Mastacan

Toward Efficient Energy Management in Electric and Hybrid Vehicles: Progress, Prospects and Emerging Trends of Hybrid Storage Systems 160
Jouhayna Bouanani, Mourad Yessef and Ahmed Lagrioui

Development of an Electronic Simulator for Relay Interlocking (ESRI) 166
Florin Badau, Valentin Iordache, Angel Ciprian Cormos and Valentin Alexandru Stan

Reference-Based Detection and Classification of Printed Circuit Boards Defects Using Deep Learning and Image Processing Techniques 171
Andreea-Daniela Savu, Nicu Bizon and Sebastian-Alexandru Dragusin

Implementation of artificial intelligence in a PC-based application for controlling a solar system 181
Georgi Mihalev

Contributions regarding the use of unmanned ground robots for radiation measurements .. 190
Carmen Silvia Oprina, Ciprian Racuciu and Lucian Stefanita Grigore

Model Predictive Direct Power Control with Selected Switching State Table for 3L-NPC Rectifier 196
Nguyen Hoang Viet, Pham Duc Dai and Hoang Khac Nhiem

Brain Tumor Prediction using Hybrid Deep Learning Features 204
Istabraq H. Jassim, Zakariya A. Oraibi and Alaa Alsafar

Dynamic Battery Storage Sizing for Solar Smart Grids: A Machine Learning Framework for Seasonal Demand Adaptation 210
Md Nafeez Rahman, Md Maidul Islam, Viacheslav Vavilov, Md. Siddikur Rahman, Jai Govind Singh and Roman Rinatovich Akhtyamov

A Hybrid Framework for Domain-Specific Knowledge Integration in Large Language Models: A Comprehensive Survey 215
Jerrick Godwin and Banuka Athuraliya

Partial Encryption With Data Hiding Performed On-the-fly On Compressed Sensed Measurements 224
Cristina Elena Popa, Constantin-Cristian Damian and Daniela Coltuc

Elaboration of ZnO nanoparticles using egg white and zinc sulphate 231
Andreea Elena Onache Vijan, Adriana-Gabriela Schiopu and Georgiana Cirstea

Fuzzy control of skeletal muscles 236
Mihai Popescu, Cristian Ravariu and Avireni Srinivasulu

Design and Implementation of Reconfigurable Approximate Adder in Real Time for Image Watermarking 245
Alidena Bhargavi, Darla Sahithya, I. Venu Madhav, Anchakanti Naveen Kumar, Prof. Avireni Srinivasulu, Musala Sarada, Bhargav Appasani and Prof. Cristian Ravariu

String Current Variability in 3D-NAND Flash Memory: A TCAD Simulation Study 251
Mrinmoy Mahapatra and Akshay K.

Stacking Ensemble Approach for Diabetes Patient Readmission Prediction 257
Mohaiminul Islam, Abdelaziz Qassi and Nasrin Chowdhury

The influence of precursors in the development of zinc oxide nanopowder using ovalbumin from chicken eggs raised in poultry farms 270
Andreea Elena Onache Vijan, Adriana-Gabriela Schiopu, Denis Aurelian Negrea, Sorin Georgian Moga and Ecaterina Magdalena Modan

Inverse Kinematic of Differential Drive Robot Using Neural Networks and Vrep Simulation 275
Hamid Bezzout, Bilal Aghoutane, Mohammed El Ghzaoui and Hanan El Faylali

The Study of Using Wind Energy to Reduce Energy Consumption in a Residential Building 280
Florentina Magda Enescu, Ioan Cristian Hoarcă, Nicu Bizon, Florin Lungu, Valeriu Manuel Ionescu and Luminița Mirela Constantinescu

Experiments for Control Plane Optimization in SDN Networks Using OMNeT++ 292
Maria Daniela Tache, Ovidiu Pascutoiu and Iulian Teodor Ciolacu

Using Instruction-Following LLM Hidden States as Conditioning for Video Diffusion Model 298
R Hema Bhushan, Amritha G K, Sathvik S Malgikar, Pranav Ambiga and Badri Prasad V R

THE IMPACT OF USING EMERGING TECHNOLOGIES IN BANKING 308
Adriana Panțoiu, Daniela Iancu and Elise Nicoleta Valcu

Commitment Schemes for Multi-Party Computation 315
Ioan Ionescu and Ruxandra F. Olimid

SwiftCommit: Integration of Commit Summary Generator Into Version Control Workflow 322
Gene Alprince Braga, Mohammad Sali Jauhari, Antonette Manolis and Jaydee Ballaho

Classification on Three Phases of Vermicomposting using VGG-16 Implemented in Impulse Radar 328
Vrian Jay Ylaya, Arrianne Mae Angob and Glanestly Abarca

Study on the Ultrasonic Characterization Method of Liquid Heavy Metals 333
Denisa Toma, Nicu Bizon, Viorel Ionescu, Alexandru Nitu, Alexandra Jinga, Larisa Popescu, Sebastian Dragusin, Robert Bostinaru and Alexandru Toma

The method of Cybersecurity Audit in Public Administration and Business 341
Zdzislaw Polkowski and Nikolas Papenfus

Advanced Energy Management in Microgrids: Leveraging Machine Learning and IoT for Optimization and Sustainability 348
Hanane Tasmant, Badre Bossoufi, Aziz Derouich and Chakib Alaoui

Droop Control and Active Power Filter Coordination in Low-Voltage Microgrids with EV Charging Stations 357
Doğan Çelik

Advanced Control of Grid-Tied LCL Inverters with Fixed Switching Frequency Direct MPC 364
Ersan Kabalci and Volker Staudt

Multi-Beam Antenna Array Synthesis Using the Fourier Method for Reliable 5G Applications 373
Adel Kouki, Ramzi Kheder, Wided Amara, Ridha Ghayoula, Lassaad Latrach, Leila Ben Ayed and Jaouhar Fattahi

Integration of SystemC with PSpice Simulations Models 381
Ionut Alexandru Dragomir, Laurentiu-Costin Gogu, Dwivedi Shikhar and Laura-Alexandra Gheorghe

Fuzzy Logic based Collision Avoidance for Autonomous Surface Vehicle 385
Joaquin Roldan Regidor, Mariano Ovelar Lopez, Yu-Chen Liu and Min-Fan Ricky Lee

Advanced Audio Signal Processing Methods for Automatic Classification of "Fire" and "Fireless" Sounds 391
Robert-Nicolae Boştinaru, Nicu Bizon, Sebastian-Alexandru Dragusin, Gabriel-Vasile Iana and Denisa Toma

Performability Analysis for Fault-Tolerant Flexible Manufacturing Systems Downtime Minimization 396
Ramez Daoud, Hassanein Amer, Yves Sallez, Hani Ragai and Gehad Alkady

Human-Machine Proximity and Warning System for Industrial Safety 401
Tarik Ege Bilsel, Melike Çolak, Nergis Pervan Akman and Ali Berkol

Artificial Intelligence as an Ethical Tool in IT Risk Management 408
Claudiu Iuonas, Aurel Mihail Titu and Danut Iuonas

Whisper Based Speech Recognition for Emergency Services 414
Daniel Eduard Minulescu and Stefan-Adrian Toma

Optimizing the Travel Planning Process based on Personalization and Efficiency using Artificial Intelligence and Political Sciences 420
Ion Bostan, Mădalin Ciprian Enescu and Cristina Claudia Bizon

Configuring KNN-based Receiver for Machine Learning-assisted Secure Random Communication System under Gaussian Environment 427
Areeb Ahmed and Zoran Bosnic

Modeling Key Parameters in Wastewater Treatment Plants 434
Gheorghe Popescu and Nicu Bizon

Digital Solutions for Smart Logistics: A Synthesis of AI- and IoT-Based Architectural Paradigms 441
Gheorghe Radulescu, Vasile-Gabriel Iana, Bogdan-Adrian Enache, Emil Pricop, Mihai Oproescu, Ioan Lita, Ovidiu Constantin Novac Novac and Mihaela Cornelia Novac

Applying NLP for emotional tone detection in medical abstracts using Bio_ClinicalBERT . 447
Mironela Pirnau, Iustin Priescu, Aurel Mihai Țițu, Claudiu Pirnau and Catalina Mihaela Priescu

A Brief Review on Fuel Cell/Battery Based Hybrid Zero-Emission Power System for Transport: Critical Analysis, Current Challenges and Trends 453
Elena Carcadea, Mihail Culcer, Mariana Iliescu, Mircea Raceanu, Adrian Enache, Alin Nicolae Corbu, Ana Nasture, Nicu Bizon and Mihai Oproescu

Experimental Assessment of Two Wind Turbine Control Techniques: Real-Time Implementation on dSPACE 1104 Board 460
Mourad Yessef, Yassine Seghrouchni, Ahmed Lagrioui and Badre Bossoufi

Communication Protocols in Embedded Systems for Automotive Applications: Comparative Analysis and Implementation through Virtual Instruments 468
Sebastian-Alexandru Drăguşin, Nicu Bizon, Rodica-Mihaela Teodorescu, Denisa Toma, Robert-Nicolae Boştinaru and Gheorghe Anghel

Social Media Sentiments Analysis on the July Revolution in Bangladesh: A Hybrid Transformer Based Machine Learning Approach 476
Md Sabbir Hossen, Md Saiduzzaman and Pabon Shaha

NiO nanostructures synthesis and characterization for functional antibacterial applications 484
Daniela Istrate, Ecaterina Magdalena Modan, Denis Aurelian Negrea and Adriana-Gabriela Schiopu

Blockchain-based Efficiency of Energy Consumption in a Homeowners Association 491
Florentina Magda Enescu, Nicu Bizon, Ioan Cristian Hoarcă and Adela Gabriela Husu

Technical Review of Class TD Audio Power Amplifiers 498
Andrei Militaru, Emanuel Valentin Buica and Horia Leonard Andrei

Advancing Reliability and Monitoring Strategies for Microgrids: Building on Previous Findings Towards Future Perspectives 508
Mohammed Amine Hoummadi, Badre Bossoufi, Mohamed Karim, Adrian Augustin Pop, Nadia Ait-Ahmed and Soumia El Hani

Leveraging Top-Model Selection in Ensemble Neural Networks for Improved Credit Risk Prediction 516
Vincent Dey, Felix Hamza-Lup and Ionut Iacob

Deployable Cylindrical Parabolic Antenna Design for Interferometric Synthetic Aperture Radar Applications 523
Eda Taşci and Mesut Kartal

Emerging Trends in Regulating the Use of Digital Technologies for Sustainable Forest Management 527
Dan Alexandru Guna, Constanta Matusescu and Mocanu Livia

Temperature estimation using infrared thermal imaging camera and temperature sensor probe in the Electromagnetic Diaphragm Pump 534
Grazia Lo Sciuto, Szymon Skupien, Pawel Kowol, Giacomo Capizzi and Salvatore Coco

AI-Driven Multi-Objective Optimization of Power Quality Indices in MV Networks through Strategic Remote-Controlled Switches Placement 540
Claudia-Vasilica Bondar, Bogdan Constantin Neagu and Gheorghe Grigoras

AI and IoT Integration in Pediatric Phototherapy: Revolutionizing Approach for Neonatal Care 546
Akash Katode and Saurabh Gupta

Effectiveness of YOLO11-Based Lightweight Model for Drone Detection in Noisy Environments 553
Bhanu Prakash Meena and M. Sabarimalai Manikandan

KS-LSTM: Improved Obesity Weight Prediction Accuracy based on Kalman Smoothing LSTM 561
Andri Pranolo, Fairuz Khairunnisa Anasyua, Agung Bella Putra Utama, Irfan Taufik, Refangga Akhmad Rizki and Navandra Rafa Ariseno

Economic and regulatory aspects of sustainable shipping with hydrogen fuel cells and battery energy storage 566
Mihai Oproescu, Nicu Bizon, Alin Gheorghita Mazare, Maria Simona Raboaca and Claudiu Ioan Abrudan

An Approach to Lung Cancer Detection and Classification from Chest CT-Scan Images Using Deep CNN and Decision Fusion as a Diagnostic Tool 573
Elena-Daniela Macaşoi and Victor-Emil Neagoe

Predicting Cybersecurity Incidents using Machine Learning 579
Aniruddha Chatterjee

Fuzzy decision system for the management of nitrification processes in wastewater treatment plants 585
Maria-Elena Stanciu, Mihai Oproescu and Silviu Ionita

Waste Heat Recovery for a PEM Electrolyzer 591
Florin-Alexandru Lungu, Laurentiu Patularu, Ana Nasture, Elena Carcadea, Ioan Cristian Hoarca and Mihai Serbanescu

Design and Implementation of Energy-Efficient Approximate Adder Supporting Image Processing Applications 596
Harsha Vardhan Kudumula, Girish Kumar Reddy Kapu, Manideep Kakaravada, Divya Vani Kothapalle, Papisetty Sai Prasad, Musala Sarada, Prof. Avireni Srinivasulu, Cristian Ravariu and Bhargav Appasani

Stochastic Gradient-Based LMS Algorithm for Reliable and Adaptive 5G Systems 602
Adel Kouki, Ridha Ghayoula, Lassaad Latrach, Leila Ben Ayed, Jaouhar Fattahi and Mohamed Mejri

New Method for Sensitivity Analysis of Reactive and Apparent Power in Non-sinusoidal State 612
Paul Cristian Andrei, Sorin Deleanu, Emil Diaconu, Andrei Cosmin Gheorghe, Marilena Stanculescu, Emil Cazacu and Horia Andrei

Deep Learning Network-Based Fruit Name Recognition for Interactive Fruit Shopping Interface and Fruit Sugar Recommendation App 618
Manohar K and M Sabarimalai Manikandan

Evaluating Deep Learning Approaches for Traffic Prediction in VANETs: A Comparative Study 628
Meryem Hanine, Zytoune Ouadoudi and Mohammed Oumsis

Innovative Practices For Managing End-of-Life Aircraft: A Review of Circular Strategies And Digital Solutions 635
Zaki El Hani, Jaouad Karroum, Aniss Moumen, Youssef Rochdi and Abdelmajid Elouadi

MBISort Algorithm: A Novel Hybrid Sorting Approach for Efficient Data Processing 642
Mohammed Alaa Ala'Anzy, Alan Zhumalin, Daulet Temirtay and Alsadg Abdalhafid

A Systems Engineering Approach to Modeling Reliability and Vulnerability in Automated Airport Baggage Networks 650
Cătălin Coman, Laura Dobrescu, Florin Ruscă and Florin Badau

Toward green port operations: modelling and reducing emissions in container terminals . . . 655
Andreea Maria Moldoveanu and Aurel Mihail Titu

Real-Time Pick-and-Place Optimization Using Q-Learning in a Digital Twin 661
Marius Constantin Marica, Nicu Bizon and Ionel Bostan

A Systematic Review of Machine Learning and Deep Learning Techniques for Exoplanet Detection 671
Pooja Illangarathne, Janani Harischandra and Kanishka Hewageegana

Dimensionality Reduction with Principal Component Analysis for Fire And Non-Fire Audio Classification: A New Approach 681
Robert-Nicolae Boştinaru, Nicu Bizon, Sebastian-Alexandru Dragusin, Gabriel-Vasile Iana and Denisa Toma

Optimal control of a robot manipulator during a load-unload operating cycle 686
Huynh Nguyen Dinh, Phong Phan Dang, Khoa Do Dang and Sanh Do

Development of an Artificial Intelligence-Enhanced Arduino-Based Photovoltaic Tracking System for Optimized Energy Efficiency 692
Cornelia-Mihaela Novac, Marius Codrean, Mihaela Codrean, Ovidiu-Constantin Novac, Cornelia Emilia Gordan and Radu Sebesan

Handling imbalanced data: the SMOTE technique 700
Calin Sandu

SPI Digital Twin in MATLAB/Simulink 705
Laura-Alexandra Gheorghe, Elena-Adriana Sorega and Lidia Dobrescu

Optimization of predictive maintenance processes for mechatronic systems using artificial intelligence 709
Aurel Mihail Titu, Emanuel Balc, Daniel Balc and Claudiu Covaci

Multi-Stream Head Pose Estimation Algorithm Based on Enhanced Feature Extraction ... 715
Zihan Liu, Bin Zou, Guohao Liu and Song Jiang

Testing Framework for Nuclear Fuel Handling Machines: Design Requirements, Standardization, Specific Technical Issues, and Engineering Challenges 724
Constantin Darie Predescu, Ionuț Dobrin and Magdalena Maria Vilău

Implementing artificial intelligence in a RAD application in the field of industrial automation 732
Georgi Mihalev

Deep Learning-Based Road Activity Image Classification for Intelligent Traffic Management 740
Sivaranjini Perikamana Narayanan, Ajit Jha, Linga Reddy Cenkeramaddi and M.Sabarimalai Manikandan

Enhancing LLM-Based Text Compression with Context-Aware Frequency Adaptation 747
Rishika Kinger, Rajith Murali, Pranav Krishna, Meghana Goru and Sujatha R Upadhyaya

URL-Based Phishing Detection and Comparison of Encoding Approaches 752
Muhammed Mutlu Yapici

Blockchain-Enabled Smart Contracts for IoT: Enhancing the Reliability of Electronic Evidence 759
Kanika Pandit and Dr. Renu Mahajan

Human-Machine Interface for the Fuel Handling System in CANDU-600 Nuclear Reactors. Design Requirements and Standards, Proposed Solutions and Encountered Issues, Objectives and Challenges 765
Ionut Dobrin, Constantin Darie Predescu and Magdalena Maria Vilau

Cultural Fashion Synthesis: Generating Indian Ethnic Wear from Textual Prompts Using GALIP 771
Hitesh Yadav M, Jayanth K, Gowtham S and Darshan V

Metallic Oxide Pigments Analysis Applied in Painting Techniques 776
Alina Maria Iancu and Adriana-Gabriela Schiopu

Optimization of Object Detection Capabilities in a FPGA SoC Using the Yolo-Tiny Model781
Hieu-Truong Ngo, Minh-Phat Le Tang, Xuan-Dung Nguyen, Thai-Thach Dang and Huu-Nghia Huynh Luu

Toward Sustainable Aviation: A Systematic Analysis of Strategies to Reduce Environmental Impact 787
Zaki El Hani, Abdelmajid Elouadi, Youssef Rochdi and Jaouad Karroum

Deep Fourier Magnitude Spectrum Based Signal Quality Assessment for Reducing False Alarms Under Noisy Recordings 795
Yalagala Sivanjaneyulu, M.Sabarimalai Manikandan and Srinivas Boppu

Image-Based Artificial Intelligence for Early Diagnosis of Ocular Diseases 801
Adriana-Andrada Ciorobea, Nicu Bizon, Sebastian-Alexandru Dragusin, Cosmin-George Nicolaescu, Robert-Nicolae Bostinaru and Andrei-Alexandru Besliu-Gherghescu

Feasibility of Impulse Radar-Based Through-Wall Imaging for Human Detection in Search and Rescue: A Study on Accuracy, Material Penetration, and Deep Learning Integration 812
Vrian Jay Ylaya, Sharralouze Sinugbuhan and Jovin Jecharr Becena

Intelligent Synthesis of Antenna Array Radiation Patterns using Woodward-Lawson Algorithm 817
Ramzi Kheder, Wided Amara, Ridha Ghayoula, Jaouhar Fattahi and Lassaad Latrach

Two Stage Single Phase PV System Using Sepic Converter 823
Nguyen Duc, Nguyen Viet, Pham Dai and Bui Dai

A novel approach on Cloudlets based applications using Meta-heuristic technique 830
Zdzislaw Polkowski, Jyoti Prakash Mishra, Sambit Kumar Mishra and Anwesha Mishra

Determination of the dietary needs of a type 2 diabetic patient: A neural network approach 835
Sidi Mwakalu, Vincent Omwenga and Patrick Ogao

Digitalization of the Judicial System in Romania. Important Strategic Objective and Guarantee for a Modern, Fast and Effective Justice System 842
Steluta Ionescu, Cristian Mares and Alin Petrea

Evaluation of Service Assurance in MPLS Networks for Medical Image Transfer 849
Cristian Stanescu, Gabriel Predusca, Liana Denisa Circiumarescu, Nicoleta Angelescu, Dan Constantin Puchianu and Cezar-Gabriel Dumitrache

A New Approach to Diagnose Driver Drowsiness using an Ensemble of Deep CNN Classifiers with Decision Fusion 855
Gabriela-Loredana Ghenea and Victor-Emil Neagoe

An Overview of Pseudorandom Number Generators With Bit Rotations 861
Veronica Cornaciu and Ciprian Racuciu

Hybrid Ant Colony and Q-Learning Algorithm for Swarm Robots: Path Planning and Collision Avoidance in Unknown Environments 865
Andrei Dutceac, Iulian-Constantin Vizitiu and Cristian Molder

Optimized Current-Source based on Brokaw Architecture for Constant Input Transistors Transconductance 870
Cristian Stancu, Anca Andreea Mitu, Andrei Neacsu, Lidia Dobrescu and Dragos Dobrescu

Basal Ganglia Selection of the Cerebral Cortex Main Conscious Process 876
Mihai Popescu and Cristian Ravariu

New Method for Sensitivity Analysis of Active Power and Total Harmonic Distortion in Non-sinusoidal State 883
Andrei Gheorghe, Sorin Deleanu, Paul Andrei, Emil Cazacu, Marilena Stanculescu and Horia Andrei

Modeling and Simulation of Thermodynamic Behavior in a Packed Bed Thermal Energy Storage System 889
Lahcen El-Mahaouchi, Mourad Yessef and Ahmed Lagrioui

Identification of Vulnerabilities in RORIS-Type Systems – Case Study: AFDJ 894
Laura-Christiana Dobrescu, Ionut-Cosmin Chiva, Marius Minea and Valentin Alexandru Stan

ECG-Based Stress Surveillance using an Attention-driven Hybrid CNN-RNN Model 902
Ghofrane Mzoughi, Jaouhar Fattahi, Mohamed Mejri, Ridha Ghayoula and Sahbi Bahroun

DermNet-CNN: A Hyperparameter-Tuned CNN Model for Accurate Skin Disease Detection 912
Isha Das, Shomitro Kumar Ghosh, Mst. Sazia Tahosin, Md.Arshad Khan Sobuj, Tawhidul Islam Sazid and Aklima Akter

Study of the structure of navigation maps using fuzzy logic 920
Maria-Elena Stanciu, Silviu Ionita, Mihai Oproescu and Rodica-Mihaela Teodorescu

Real-Time Pick-and-Place Digital Twin in Unity for Industry 4.0 925
Marius Constantin Marica, Nicu Bizon and Ionel Bostan

Review on the Detection of Persons in Cargo and Transport Vehicles 931
Ilie Stelian, Gabriel Vasile Iana, Laurentiu Mihai Ionescu, Mihai Oproescu and Valentin Alexandru Stan

Fleet Management System's Attack Graph 939
Mariam Ibrahim and Ruba Elhafiz

Comparative Study of Two Web Applications Developed Using MERN and MEAN Stacks 946
Ovidiu-Constantin Novac, Cornelia-Mihaela Novac, Ioan Mircea Gordan, Mircea Danut Pantea, Gyongyi Bujdoso, Andreea-Milena Suba, Catalin-Daniel Morar and Marius Codrean

Domain modeling using template metaprogramming 951
Adrian Beteringhe and Radu Bucea-Manea-Țoniș

Predictive Phase Shift Control based on Transformer Current Control for Dual Active Bridge 955
Pham Hong Duong, Nguyen Hoang Viet, Pham Duc Dai and Bui Van Dai

Performance Evaluation of a New Efficient Energy Management Strategy for Fuel Cell Hybrid Electric Vehicles 963
Sorin Ioan Sorlei, Bizon Nicu, Mihai Varlam, Mircea Raceanu, Elena Carcadea and Simona Maria Raboaca

Robust Control of Doubly Fed Induction Generator Based on Direct Field Oriented Control 977
Chahbi Aziz, Yessef Mourad, Amharech Amine and Ameziane Hatim

Comparative Analysis of Deep Learning Models for Long-Term Electricity Demand Forecasting in Bangladesh Using Web-Scraped Data 982
Sakif Yeaser, Tasnia Nafs and Md. Ikrama Hossain

New Wave Logistics Framework: Enabling Sustainable Practices in Road Transportation . 989
Younesse Ouahbi and Soumia Ziti

Field Tests of an Automated Solution for Traveler Flowing Measurement in Inner Spaces . 995
Bogdan-George Popescu and Marius Minea

Automating Digital Forensic Investigations: The Impact of Machine Learning on Electronic Evidence 1004
Dr. Renu Mahajan and Kanika Pandit

Digital Decoder from 16-Bit Binary Code to 7-Segment Quad LED Display 1011
Mircea-Petru Ursu, Ovidiu-Constantin Novac and Cornelia-Mihaela Novac

A Comparative Study of Transformer-Based Models and Machine Learning Techniques for Enhancing Bangla Sentiment Analysis 1015
Md. Saimim Islam Khan Hamim, Ishtiaque Ahmed, Tawhidul Islam Sazid, Faria Haque, Md. Najimul Hossain, Suborna Rani Pal, Mst. Sazia Tahosin and Md. Alif Sheakh

Fractal-Slotted Microwave Bandpass Filter Designs for Wireless Applications 1024
Karthie Sugumarasamy, Namratha Muralidharan and Mithila Jagennathan

Efficient Database Management System for Organizing Activity using Android Technology 1031
Andreea Popa, Florentina Magda Enescu and Nicu Bizon

Coffee maker prototype based on automotive sensory and communication systems 1040
Radu-Andrei Tunsoiu and Cristina Saracin

Design of Current Mode Active filters Using CCCII for Biomedical Applications 1046
Syed Zahiruddin, Poola Subbarayudu, Prof. Avireni Srinivasulu, Cristian Ravariu, Bhargav Appasani and Musala Sarada

Machine Learning-Based Prediction of S11 for a 5G Antenna Using Gaussian Process Regression 1052
Bilal Aghoutane, Hamid Bezzout, Houda Hiddar, Badre Bossoufi, Mohammed El Ghzaoui and Hanan El Faylali

Optimal Stochastic Virtual Power Plant Dispatch with Carbon and Green Certificate Trading 1057
Hossein Shayeghi, Iraj Faraji Davoudkhani, Fardin Hashemzadeh and Nicu Bizon

Improving Personalized Customer Engagement in E-Commerce through Distributed Web Systems and Advanced CRM Solutions 1063
Vassil Milev, Marian Ileana and Pavel Petrov

Design and Development of Corn Disease Detection with UAV-based Deep Learning Technology 1068
Vrian Jay Ylaya, Lourd April Pecante and Dave Sherich Andit

Evaluation of IoT Network Security Against Botnet Attacks Through Simulation in NetSim 1074
Andrei Claudiu Francu, Gabriel Predusca, Liana Denisa Circiumarescu, Nicoleta Angelescu and Dan Constantin Puchianu

Parabolic Modulation Based Non-singular Fast Terminal Sliding Mode Control for Single-Phase Stand-Alone Inverters 1080
Guven Balta, Cagdas Hisar, Necmi Altin and Ibrahim Sefa

Architecture, Performance, and Economic Assessment of Light Urban EVs: A Case Study on Central vs. In-Wheel Motors 1085
Burcea Victor Florin, Gabriel-Vasile Iana, Emil Pricop, Mihai Oproescu, Valentin Alexandru Stan, Nistor Gheorghe, Ovidiu Constantin Novac, Coman Andreeea and Cornelia Mihaela Novac

An Analysis of Genetic Algorithms in Cryptography 1093
Veronica Cornaciu and Ciprian Racuciu

A Low Rank Adaptation-Based Convolutional Neural Network and Transformer Model for Cervical Cancer Detection in Histopathological Images 1100
Bhaswati Singha Deo, Mayukha Pal, Prasanta K. Panigrahi and Asima Pradhan

Design and simulation of boost converter for Smart Grid Using DSP-Based Model Predictive Control 1108
Youness Hakam and Mohamed Tabaa

Reversible Contrast Stretching for Digital Images 1114
Isabela Elena Banescu, Alina Mihaela Badea, Liviu Andrei Necula, Ioan Catalin Dragoi, Henri-George Coanda and Dinu Coltuc

Next-Gen Microfluidics: Reinforcement Learning Driven Droplet Size Precision System 1119
Sameer Dubey, Tvs Ramarao, Arshad Javed, Satish Dubey, Sanket Goel and Badar Ali

Predictive Current Control with Preselection Vector Scheme for Matrix Converter 1127
Nguyen Hoang Viet, Pham Duc Dai and Hoang Khac Nhiem

A review of MPPT techniques for wind energy systems : Offshore Challenges and Solutions 1132
Souhayla El Ouardi, Mourad Yessef, Yassine Chaibi and Zakaria Chalh

Real-Time Implementation and Performance Comparison of Neural Network and Sliding Mode MPPT Controllers for Wind Turbines 1140
Yassine Seghrouchni, Mourad Yessef and Badre Bossoufi

Enhanced Micro-Vessel Image Segmentation Using the Advanced EyeU-Net Model 1145
Mariem Qaddour, Yassine Benjelloune Touimi and Khalid Minaoui

Enhancing DICOM Security in Medical Imaging Networks using Software-Defined Networking 1152
Ovidiu Păscutoiu, Maria Daniela Tache, Iulian Teodor Ciolacu and Sorin-Aurel Moraru

Creating an Artificial Evolutionary Intelligence Using a Graphic Engine 1159
Alexandru Mihai Enache, Florentina Magda Enescu, Nicu Bizon and Alexandra Andreea Chiriță

An approach to implementing a 3D Stealth Game in Unreal Engine 1165
Rotaru Adrian and Savulescu Corina

Energy Performance Monitoring Solutions for Fuel Cell/Battery Hybrid Power Systems – short analysis 1171
Mihai Oproescu, Nicu Bizon, Alin Gheorghita Mazare, Maria Simona Raboaca and Claudiu Ioan Abrudan

Fault-Tolerant Actuator in Reliable Workcell with Video Sensor 1178
Alyaa Ismaeil, Manar Rashad, Ramez Daoud, Hassanein Amer, Tarek Refaat and Hany Elsayed

Compressive Imaging based Floating Debris Detection using YOLOv8 1183
Aswathy K P and M Sabarimalai Manikandan

An Enhanced MPPT Algorithm Based on Adaptive Linear Regression with Contextual Weight Memory (ALR-CWM) for PV Systems 1190
Rida Amine, Noureddine El Barbri and Hatim Ameziane

Clustering-based Decision-Making Support System for Optimal Location of Electric Vehicle Charging Stations in Low-Voltage Distribution Networks 1194
Ecaterina Chelaru, Gheorghe Grigoras, Bogdan-Constantin Neagu and Ștefania-Loredana Gălbău

Improving the Contextual Understanding of LLMs through Multi-Teacher Knowledge Distillation and RAG 1200
Yashaswini Ippili, Vruddhi K Jain, Yash Dixit, Gautam Saraf and V.R. Badri Prasad

Design and Optimization of a Constant-Frequency Dual-Loop Control Strategy for a Power Factor Correction Rectifier in Solid-State Transformers 1207
Hossein Shayeghi, Hamed Mojarad, Alireza Rahnama, Sina Tamaddoni, Farzad Shahi and Nicu Bizon

Optimization of a Photovoltaic Pumping System Using a Modified ABC Algorithm 1213
Abdelkarim Ballouti, Mohamed Chouiekh, Hatim Ameziane, Hassane Latrach, Youness El Mourabit and Alia Zakriti

Valorization of Biogenic Waste Shells:Mytilus edulis and Rapana venosa for Controlled Elaboration of Calcium Carbonate 1217
Adriana-Gabriela Schiopu, Alexandru Berevoianu, Raluca Marginean, Mihai Oproescu, Paul Mereuta, Kim Keunhwan, Valentin Bugaescu and Stefan Mira