

2025 IEEE 22nd International Conference on Sciences and Techniques of Automatic Control and Computer Engineering (STA 2025)

**Hammamet, Tunisia
20-22 December 2025**

IEEE Catalog Number:
ISBN:

CFP25STA-POD
979-8-3315-9766-5



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:	CFP25STA-POD
ISBN (Print-On-Demand):	979-8-3315-9766-5
ISBN (Online):	979-8-3315-9765-8
ISSN:	2378-7163

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

Fast Gradient-Based Distributed NMPC with Event-Driven Communication	1
<i>Dine El Houda Hammami, Saber Maraoui, Kais Bouzrara</i>	
Design of the First Optimal Sliding Mode Control of Uncertain Linear Systems Based on Metaheuristics	6
<i>Wafa Boukadida, Awatef Yahyaoui, Anouar Benamor, Hassani Messaoud</i>	
Multi-objective Design of Optimal First-Order Sliding Mode Control for trajectory tracking of Quanser Aero based on GA	11
<i>Wafa Boukadida, Awatef Yahyaoui, Anouar Benamor Hassani Messaoud, Hassani Messaoud</i>	
A novel sliding mode control scheme for an underactuated DC-DC boost converter powered by PV panels	16
<i>Sinda Aloui, Haithem Sinene Mahdoui, Salama Makni, Hafedh Abid</i>	
Adaptive Event-Triggered State Feedback Control for Nonlinear Polynomial Fuzzy Systems Based on Sum-of-Squares Approach	22
<i>Zaineb Smida, Hamdi Gassara, Ahmed El Hajjaji</i>	
Enhanced Vector Control of 5- Φ PMSM-Based MTPA Used for Ship Propulsion System under Hydrodynamic and Aerodynamic Disturbances	28
<i>Khouloud Ben Hammouda, Ramzi Trabelsi, Mohamed Trabelsi, Riadh Abdelati</i>	
Performance Evaluation of Proportional Navigation Guidance Against Evasive Maneuvering Targets	35
<i>O. Maklouf, A. Kshinba, A. Tresh, A. Eljubrani</i>	
New PSO based algorithm for ARX Laguerre model parameters optimization	41
<i>Marwa Yousfi, Chakib Ben Njima, Tarek Garna</i>	
Optimal modelling of a MIMO Aero system: PSO based method	47
<i>Marwa Yousfi, Chakib Ben Njima, Tarek Garna</i>	
NTSMC based on high-gain adaptive observer for a coupled two-tank	53
<i>Narjes Layouni, Safa Choueikh, Marwen Kermani, Faouzi M'Sahli</i>	
Algebraic Stability Criteria for Switched Nonlinear Neutral Time Delays Systems	59
<i>Sabrine Ben Tekaya, Marwen Kermani, Ahmed Jaballi, Anis Sakly</i>	
Design And Evaluation Of A Semi-Automated Control System To Enhance Manual Drilling In Mining Operations	65
<i>Lamson Maphosa, Ehsan Gatavi</i>	
A Sensorless Direct Field-Oriented Control Strategy Based on MRAS for Five-Phase Induction Motor Drives	71
<i>Sarra Nasri, Saber Krim, Mohamed Faouzi Mimouni</i>	
Energy Valley Optimizer Approach for Controlling Switched Nonlinear Systems	76
<i>Sabrine Ben Tekaya, Marwen Kermani, Ahmed Jaballi, Anis Sakly</i>	
Robust Multimodel Ho Control Design for Nonlinear Systems: Disturbance Rejection	82
<i>Rihab Abdelkrim</i>	

Soft Actor-Critic Based Controller for Clutch Fill and Engagement	88
<i>Behzad Safarijalal, Benoit Boulet</i>	
Second-Order Filtering for Internal Model Control Tuned PID Controllers	94
<i>Atilla Uygur</i>	
Supervised and unsupervised Voltage Classification in an IEEE 14-Bus Network: Methods, Challenges, and Performance Analysis	100
<i>Khouloud Wali, Mouna Rekik, Lotfi Krichen</i>	
Wear Prediction and Remaining Useful Life Estimation in CNC Milling Using Deep Learning-Based PHM Framework	106
<i>Sahbi Wannes, Lotfi Chaouech, Jaouher Ben Ali, Eric Bechhoefer, Mohamed Benbouzid</i>	
Discrete Sliding Mode Observer for Wind Energy System	112
<i>Kaouthar Tlili, Samah Ben Atia, Khadija Dehri</i>	
LSTM Autoencoder-based approach for anomaly detection of industrial process in presence of incomplete data	118
<i>Sana Benahmad, Hajer Mlayeh, Atef Khedher</i>	
Flatness-Based Predictive Control with EKF for UAV Target Tracking	124
<i>Haidar Ahmad Ali, Abadi Amine, Gabon Aurore, Laligant Olivier</i>	
Cryo-CMOS for Scalable Quantum Computing: A Comprehensive Cross-Layer Review	130
<i>Siwar Mejri, Amel Neifar, Mohamed Masmoudi</i>	
Characterization of HW-SW configurations in FPGA-based adaptive AI Imaging Systems	136
<i>Wadie Ben Abdallah, Wassim Ghiloufi, Nader Ben Amor</i>	
Comparison of Random Forest and Gradient Boosting for Predicting Electric Vehicle Charging Time	142
<i>Rachid Benbey, Youssef Dhieb, Moez Ghariani</i>	
Photovoltaic Power Forecasting Using a Sequence-to-Sequence LSTM Model for Smart Electric Vehicle Charging Stations	148
<i>Youssef Khlifi, Mohamed Ali Zdiri, Bilel Dhouib, Naourez Ben Hadj</i>	
Evaluation of Energy Consumption and Dynamic Performance of a Fuel Cell EV Across Standard Driving Cycles	154
<i>Syrine Kotti, Naila Ben Halima, Naourez Benhadj</i>	
Overview of Charging Technologies for Electric Vehicles	160
<i>Bilel Abbassi, Sabeur Jemmali, Bilal Manai</i>	
Resilient event triggered Control under DoS Cyberattacks for autonomous vehicles	165
<i>Chams Assil Chelly, Salama Makni, Sinda Aloui, Ahmed El Hajjaji</i>	
Intelligent Real-Time Power Management of Electric Vehicles Power Exchange for Grid Frequency control	171
<i>Mouna Nasri, Youssef Kraiem, Saber Krim, Mohamed Faouzi Mimouni</i>	
Actuator Fault Detection and Identification for Boost Converters in Photovoltaic System	177
<i>Maouadda Ismail, Karim Dahech, Mohamed Chaabane</i>	

Comparison between C-SVM and Nu-SVM methods for induction machine faults classification	183
<i>Aroui Tarek, Ikhllass Maiez</i>	
Unknown Input Observer design for Detecting Stator Inter-Turn Short-Circuit Faults in DFIG-Based Wind Turbines	189
<i>Ghada Amami, Moez Allouche, Mariem Ghamgui, Sandrine Moreau, Driss Mehdi, Mohamed Chaabane</i>	
Weighted Fail-Safe Self-Purging Technique for Sensors in Factory Automation	195
<i>Hassan M. Hassan, Gehad I. Alkady, Ramez M. Daoud, Hassanein H. Amer, Dina G. Mahmoud</i>	
Low Area Overhead Modified Reconfigurable Duplication for Multi-Die FPGA-based Space Applications	200
<i>Yosof Maklad, Hassan M. Hassan, Ramez M. Daoud, Hassanein H. Amer, Gehad I. Alkady, Dina G. Mahmoud</i>	
Wind Turbines Fault Detection based on TabTransformer	205
<i>Haidera Ahmidnah, Menny Elbah, Boudy Bilal, Aboubecrine Mohamed Laghdaf, Hassen Mekki, Tarek Aroui</i>	
Fault Isolation with HBG-CNN in a Direct Current Drive of a water solar pumping	211
<i>Hajer Yaich, Taher Mekki, Slim Triki</i>	
Interval Principal Component Analysis for Fault Detection under Measurement Uncertainty	217
<i>Anissa Ben Aicha, Raoudha Bel Hadj Ali, Majdi Mansouri, Kamel Belkhiria</i>	
Interval Principal Component Analysis: Modeling and Detection of Uncertain Data	223
<i>Majdi Mansouri, Raoudha Bel Hadj Ali, Anissa Ben Aicha, Kamel Belkhiria, Rami Al-Hmouz</i>	
Digital Twin-Enhanced Multimodal Learning for Robust Fault Detection in Photovoltaic Energy Systems	229
<i>Imen Nakti, Majdi Mansouri, Atef Khedher</i>	
An Interpretable Multimodal Attention and Stacking Framework for Intelligent Wind Turbine Fault Diagnosis	235
<i>Nawel Said, Atef Khedher, Majdi Mansouri, Rami Al-Hmouz</i>	
Multimodal AI Framework for Fault Detection in Photovoltaic Systems: Robust Preprocessing and Modality-Specific Modeling	241
<i>Nawel Said, Majdi Mansouri, Atef Khedher</i>	
Dynamic Eccentricity Fault Diagnosis in PMSMs of EVs Using Data-Driven Learning	247
<i>Manel Krichen, Naourez Ben Hadj, Dorra Abdeljalil, Rafik Neji</i>	
Driver Drowsiness Detection Using Boosting Algorithms with Integrated EEG Spectral Entropy and PSD Features	253
<i>Emna Jriri, Amna Maraoui, Imen Werda</i>	
Modeling and Validation of a Two-Stage Degradation and Reliability Estimation Model in an Actuator	258
<i>Nabila Mabrouk, Ali Ben Brahim, Fayçal Ben Hmida</i>	
Intelligent Wind Turbine Fault Detection Using Multimodal Attention and Digital Twin Integration	264
<i>Imen Nakti, Atef Khedher, Majdi Mansouri, Rami Al-Hmouz</i>	
Comparative Analysis of Deep Learning, and Quantum Models for Time Series Forecasting	271
<i>Yassine Hachaïchi, Riadh Hasnaoui</i>	

Advanced Deep Residual Network Architectures for Accurate Liver and Tumor Segmentation in Medical Imaging	277
<i>Ghada Douzi, Imen Werda, Amna Maraoui</i>	
Towards Safer Roads: Hybrid Deep Learning for Binary Facial Emotion Recognition in Driver Monitoring Systems	282
<i>Siwar Slimi, Imen Fourati Kallel, Mohamed Kallel, Mourad Fakhfakh</i>	
Explainable AI-Enhanced Interpretation for Inner Speech Classification Using EEG Signal	288
<i>Afifa Jridi, Kais Belwafi, Ridha Djemal, Carlos Valderrama</i>	
Hybrid CNN+LSTM Architecture for Motor Imagery EEG Classification in BCI	294
<i>Sana Belgacem, Amira Echioui, Mohamed Ghorbel</i>	
Lightweight Hybrid Model Based on Compact Convolutional Transformers (CCTs) for Efficient Skin Lesions Classification	300
<i>Khouloud Elbedoui, Hiba Mzoughi, Mohamed Ben Slima</i>	
A CNN–Transformer Synergistic Framework for Robust Multi-Class ECG Beat Classification	306
<i>Mohamed Amin Gader, Sourour Karmani, Ridha Djema, Carlos Valderrama</i>	
Towards Fetal Health: Development of an Intelligent Monitoring System Based on ECG Analysis	312
<i>Aya Abdallah, Omar Trigui, Itebeddine Ghorbel, Khouloud Abdelli, Mohamed Ghorbel, Fathi Kallel</i>	
MedXAI-MM: A Unified Multi-Modality Explainable Artificial Intelligence Framework for Clinical Medical Imaging	317
<i>Olfa Ghribi, Maher Kharrat, Mohamed Chaabane</i>	
Multi-Stage Transfer Learning with EfficientNetV2 for Mammographic Breast Mass Classification	322
<i>Meriem Zine Elabidine, Anis Messaoud</i>	
Digital Biomarkers of Infection: The Emerging Role of Actimetry in Disease Surveillance for NonInvasive Monitoring of Health and Infection	328
<i>Meriem Allous, Nacira Laamiri, Radjia Zard, Jaouher Ben Ali, Joël Belmin, Moez Bouchouicha</i>	
<i>Roomila Naeck, Jean-Mark Ginoux</i>	
Frequency Binned 1D CNNs for Low-Latency Chipless RFID Tag Detection Considering Noise, Doppler Effect and Multi-Path Channels	334
<i>Kimberley Gehron, Ines Bakri, Mohamed El Hadidy</i>	
Integration of a Harmonic-Compensated dqPLL into PV-Grid Side Converter: Comparative Analysis with Classical dqPLL for Harmonic Reduction and Frequency Stability	340
<i>Khalil Gassara, Santiago De Pablo, Bilel Gassara, Ahmed Fakhfakh</i>	
EEGWaveNet: A Transfer and Federated Learning Framework for Cross-Dataset Seizure Detection	346
<i>Souhaila Khalfallah, Kaouther Selmi, Kais Bouallegue</i>	
End-to-End Multimodal Broadcast Fusion: 3D MRI–Clinical Network for Volumetric Tumor Delineation and Survival Prediction	354
<i>Fathia Ghribi, Fayçal Hamdaoui</i>	
Design and Simulation of an Elliptical Passive RFID Tag with Defective Ground Structure for IoT Applications	360
<i>Chayma Ben Salem, Hatem Garrab, Darine Kaddour, Pierre Lemaitre-Auger</i>	
<i>Carlos Alberto Valderrama Sakuyama, CarlosAlberto Valderramasakuy</i>	

HMM-Based Reservation Plans of Cloud Resources	365
<i>Louis-Marie Péan, Omar Abdelaaziz Kabbaj, Jean-Baptiste Masson, Bruno Marhic, Laurent Delahoche</i>	
Adaptive Constrained-Hidden Markov Model (C-HMM) for Multi-Room Occupancy Prediction	371
<i>Omar Abdelaaziz Kabbaj, Louis-Marie Péan, Jean-Baptiste Masson, Bruno Marhic, Laurent Delahoche</i>	
Hybrid Quantum–Classical Models for Forecasting and Anomaly Detection on Edge IoT Devices	377
<i>Rayen Hajjem, Akramul Azim, Moncef Triki</i>	
Intelligent Monitoring of Electrical Transformers Using IoT and Machine Learning	383
<i>Faraqid Qasim Mohammed, Yassine Aydi, Mohamed Abid</i>	
Machine Learning Approaches for Estimating Power Differences in Residential Solar Systems	389
<i>Basma Kouas, Mouna Rekik, Lotfi Krichen</i>	
The Role of Machine Learning and Large Language Models in Software Testing and Validation	395
<i>Yassine Hachaïchi, Mohamed Amine Ouerghi</i>	
REXpanded-LSTM: A Recurrent Expansion Framework for Milling Machine Degradation Prognostics	401
<i>Tarek Berghout, Sahbi Wannes, Jaouher Ben Ali</i>	
Practical Implementation of a Hybrid ANN-SMC for Photovoltaic MPPT Control	407
<i>Youssef Dhieb, Kais Jamoussi, Larbi Chrifi-Alaoui, Moez Ghariani</i>	
Comparative Performance Analysis of YOLOv8 and YOLOv9 for Vehicle Detection and Distance Estimation	413
<i>Souha Ben Othmen, Wajdi Farhat, Hassene Faiedh, Carlos Valderrama</i>	
Limitations and Comparative Evaluation of Statistical and Deep Learning Approaches for Short-Term Household Energy Forecasting	419
<i>Maissa Taktak, Ahmed Fakhfakh, Faouzi Derbel</i>	
Analysis of a Multi-Target Indoor Localization System Based on Real Data Measurements	425
<i>Aziza Chabchoub, Sirine Chiboub, Rihab Souissi, Salwa Sahnoun, Ahmad Fakhfakh, Faouzi Derbel</i>	
Learning Earthquake Patterns over Mediterranean Grids Using Random Forests and Gradient Boosting	431
<i>Imen Ziadi, Nejla Essaddi, Mongi Besbes</i>	
Motion-based Frame Selection for Enhanced Action Recognition in Videos	437
<i>Hend Basly, Mohamed Amine Zayene, Fatma Ezahra Sayadi</i>	
Multiobjective Tuning of RBF Neural Network for MPPT Control of Standalone PV System	443
<i>Mohand Akli Kacimi, Celia Aoughlis, Amine Abadi, Toufik Bakir</i>	
On the Investigation of Hybrid Excited PM Machines with Emphasis on the Air Gap Flux Density	449
<i>Ahmed Asmi, Imen Abdhennader, Amal Souissi</i>	
On the Design and Sizing of Consequent Pole Surface Mounted PM Machines	455
<i>Hajer Jmal, Amal Souissi, Imen Abdennadher</i>	
Projection-Based Fusion of 2D LiDAR and Camera Data for Real-Time: Architecture and Experimental Evaluation : *Note: Sub-titles are not captured in Xplore and should not be used	461
<i>Walid Benayed, Mohamed Slim Masmoudi, Imen Mabrouk, Mounir Ben Nasr</i>	

Reinforcement Learning-Based Autonomous Navigation and Obstacle Avoidance using Deep Q-Networks	466
<i>Walid Benayed, Mohamed Slim Masmoudi, Imen Mabrouk, Mounir Ben Nasr</i>	
Edge AI-Based Fall Detection for an Elderly Care Robot	472
<i>Sarra Ben Halima, Faten Ben Abdallah, Joseph Haggege</i>	
Offline Speech Recognition for Real-Time Voice-Controlled ROS2 Navigation in Indoor Environments	478
<i>Wafa Ben Abdelaziz, Mohamed Slim Masmoudi, Walid Benayed, Imen Mabrouk, Mounir Ben Nasr</i>	
Autonomous Mobile Robot for Medication Delivery in Hospitals with Web-Based Mission Control	483
<i>Imen Mabrouk, Walid Benayed, Mounir Ben Nasr, Wafa Ben Abdelaziz, Mohamed Slim Masmoudi Ayoub Abderrahmen</i>	
A Deep Learning-Enabled BCI Framework for Autonomous Wheelchair Navigation in ROS2-Simulated Environments	488
<i>Aya Abdallah, Walid Benayed, Omar Trigui, Amal Bouabid, Mohamed Ghorbel</i>	
From Position-Based to Shape-Based Needle Control in Prostate Brachytherapy	494
<i>Othman Lakhal, Abdelkader Belarouci, Mario Sanz Lopez, Rochdi Merzouki</i>	
Optimized YOLOv8 for Military Object Real-Time Detection on Autonomous Drones	500
<i>Amira Guesmi, Oussema Ghorbel, Jalel Ktari, Nour Akkeri</i>	
Power Management Strategy for Islanding BESS based AC Microgrid Systems with Multiple Renewable Energy Resources	505
<i>Osama M Abuzaid, Souhir Sallem, Ali J Khafafa, Mohamed Ben Ali Kamoun</i>	
An Empirical based UTAUT 2 Model and PLS SEM software Study of Smart and Renewable Energy Sources Integration in Libya Electricity System	510
<i>Ali J Khafafa, Souhir Sallem, Osama M Abuzaid</i>	
Robust Control Framework for a Grid-Connected PV/FC Hybrid System	516
<i>Abdel Aitouche, Dhaker Abbès, Haoping Wang</i>	
Implementation of a New MPPT Controller-Based Fuzzy Logic Combined With Cuckoo Search Optimization To PEMFC in Spontaneously Operating Circumstances	522
<i>Abd Essalam Badoud, Douli Samir Abdelhak, Belkacem Ould Bouamama, Mahdi Boukerdja</i>	
Control and Performance Assessment of a GridConnected Wind-PV-PEMFC System via FCS-MPC	529
<i>Abd Essalam Badoud, Nassir Deghfel, Abdelhak Samir Douli, Belkacem Ould Bouamama, Mahdi Boukerdja</i>	
Monitoring of Photovoltaic Module Performance Based on Low-Cost Wireless Data Acquisition System	535
<i>Mahabba M. Balrhiem, Sana Ahmed Abdaljlil, Amer R. Zerek, Fatimazahra Messaoud</i>	
Enhanced Performance of Five-Phase PMSG-based Grid Connected Wind Turbines Conversion System	542
<i>Edriss Ben Saleh, Ramzi Trabelsi</i>	
Use of Vanadium Redox Flow Batteries in Electric Grid	551
<i>Oumayma Hadj Salem, Ghada Boukettaya, Rafik Cherni</i>	
Performance Comparison of 1st and 2nd Order Sliding Mode MPPT Controllers in Photovoltaic Systems	557
<i>Walid Ouled Amor, Rachid Benbey, Youssef Dhieb, Moez Ghariani</i>	

Evaluation and Comparative Study of Performance Metrics for Hydrogen Energy Systems	563
<i>Hichem Mabrouki, Mohamed Ali Zdiri, Mohsen Ben Ammar, Hsan Hadj Abdallah</i>	
DRL-based MPPT Control for Quadratic Boost Converter powered by a PV source	569
<i>Mayssa Hedyaoi, Mariem Ghamgui, Moez Allouche, Larbi Chrifi Alaoui, Driss Mehdi Mohamed Chaabane</i>	
Modelling of the Green Hydrogen chain production	575
<i>Dikra-Nadjah Chouchane, Saïd Drid, Samir Bouslimani, Larbi Chrifi-Alaoui, Driss Mehdi Mohamed-Dhiaeddine Drid</i>	
Study of Energy Flow in a Standalone Hybrid PV/Fuel Cell System	580
<i>Tawfik Soltani, Monia Ben Khader Bouzid</i>	
Optimal Design and Management Strategies for Electric Vehicle Charging Infrastructure	586
<i>Kholoud Trabelsi, Islem Lachhab</i>	
Performance Evaluation of LSTM and XGBoost Models for Energy Consumption Prediction	592
<i>Youssef Dhieb, Mariem Trojette, Alaeddine Ben Hammouda, Khaled Grayaa</i>	
Intelligent Hybrid MPPT Strategy for Photovoltaic Systems Using PSO-ROA: A Simulation- Comparative Study	598
<i>Bouloukza Ibtissam, Lekhchine Salima, Ladaycia Hania, Rahab Abderezak, Senani Fawzi, Lekhchine Salima</i>	
Optimizing Peer-to-Peer Energy Trading with MILP-Based Transaction Reduction	604
<i>Khaled Taouil, Amal Gassara, Salma Bradai, Mohamed Wajdi Kharrat, Badii Louati, Michel Giordani</i>	
Data-Driven Building Digital Twin: Architecture and Heat-Pump Demand Peak-Shaving Scenario	610
<i>Khaled Taouil, Mohamed Wajdi Kharrat, Moez Allouche, Lotfi Kamoun, Mohamed Chaabene Ahmed Fakhfakh</i>	
Hybrid ANN-FLC Based Fault Detection in PV Systems	616
<i>Salem Idham Ewad, Mohammed Taha Yunis, Basima Taresh Dawood, Hayder DAKhil Atiyah</i>	
Equilibrium Optimizer for Multi-Objective Reconfiguration of Distribution Networks Considering Hourly Demand Variations	622
<i>Samir Bouslimani, Anes Bouhanik, Salhi Ahmed, Djemai Naimi, Said Drid, Younes Zahraoui</i>	
Quantitative Assessment of Power Loss in Photovoltaic Panels Caused by Microcracks	628
<i>Farid Hadjrioua, Beddar Antar, Djelloul Djafer, Idriss Hadj Mohammed, Samir Hamid Oudjana</i>	
A System Generator Framework for FPGA-Based Three-Phase Multilevel Inverter Design	633
<i>Dine El Houda Hammami, Saber Maraoui, Kais Bouzrara</i>	
Enhanced Pothole Detection using Fine-Tuned YOLOv10s: A Robust Approach for Road Condition Monitoring	639
<i>Adnen Albouchi, Mohamed Ali Hajjaji, Mohamed Atri</i>	
Towards Efficient Instance Segmentation in UAV based Urban Environments with Fine-Tuned YOLOv11m-ISeg	645
<i>Seifeddine Messaoud, Mohamed Ali Hajjaji, Mohamed Atri</i>	
Toward Practical Onboard Impedance Spectroscopy: Multi-Frequency, Self-Powered Measurement of Lithium-Ion Cells	651
<i>Amin Fischer, Hamza Boughanmi, Lukas Thierfelder, Ahmed Yahia Kallel, Olfa Kanoun</i>	

Resilient Solar-Hybrid Energy Management and Monitoring System for Outdoor Telecommunications Equipment	656
<i>Rihab Jallouli, Mouna Rekik, Lotfi Krichen</i>	
Real Time DETRL-based Night Vision Detection for Autonomous Driving	662
<i>Safa Teboulbi, Seifeddine Messaoud, Mohamed Ali Hajjaji, Mohamed Atri, Abdellatif Mtibaa</i>	
Vehicle Segmentation Using YOLOv8n-seg: Advancements in Real-Time Detection	668
<i>Safa Teboulbi, Seifeddine Messaoud, Mohamed Ali Hajjaji, Mohamed Atri, Abdellatif Mtibaa</i>	
A Learning-Based Study of MobileNetV2 and FD-MobileNet for Traffic Police Gesture Recognition: Towards Embedded Applications	674
<i>Mohamed Takiyoullah Oubeid, Amna Maraoui, Fatma Ezahra Sayadi</i>	
Hardware Optimization of Adaptive DCT2 Transform	679
<i>Hend Basly, Amna Maraoui, Imen Werda, Fatma Ezahra Sayadi</i>	
Smart Cardiac Output Prediction Using AI and IoT	683
<i>Manel Souaf, Ibtihel Nouira, Mohamed Salman</i>	
Automated Classification of Nailfold Capillaroscopy Images Using Morphological Feature Extraction	689
<i>Dorra Boudaouara, Randa Boukhris, Randa Boukhris, Chifa Damak</i>	
Statistical Analysis of the QTMT Structure within an Enhanced Compression Model	695
<i>Amina Kessentini, Narimen Elkawach, Ibtissem Wali, Nouri Masmoudi</i>	
Enhanced Fracture Detection in X-rays via Transfer Learning and Data Preprocessing	700
<i>Nada Farhani, Wiem Baccari, Mounir Zrigui</i>	
Analysis and Simulation of ISAR Imaging Based on Parameters Affecting Surface Shape	706
<i>Abdulbasit Kareem Omran, Adel Saad Emhemmed, Abdulbast Kriama</i>	
Contrastive Semantic Reinforced Summarization: A Hybrid Framework for Arabic Abstractive Text Summarization	712
<i>Karim Dabbabi, Ahlem Kehili, Adnen Cherif</i>	
Towards Robust and Clinically Reliable Lung CT Segmentation Using Deeply Supervised U-Net++	718
<i>Norhène Gargouri, Nouredine Lamred, Nesrine Charfi, Alima Damak, Wiem Feki</i>	
BER Performance Evaluation of 8-PSK and 8-APSK in 2X3 MIMO System over Wireless Communication Channel	724
<i>Hajer F. Dougdoug, Amer R. Zerek</i>	
Modeling and Simulation of 28 GHz mmWave MIMO Heterogeneous Networks in the Tripoli Urban Area	730
<i>Sara Fkini, Amer R. Zerek</i>	
2-D quasi-omnidirectional for hybrid WPT-BPLC System	736
<i>Safa Zouaoui, Wael Dghais, Rui Melicio</i>	
The Effect of Rain Attenuation on the Efficiency of Wireless Communication Systems in Millimeter Wave Frequencies	741
<i>Mohamed Farag Abughalia, Olga Boiprav, Amer R. Zerek, Salah E A Abeid</i>	

Performance Enhancement of MIMO Systems Using SPSK	747
<i>Aisha Zaied Qassim, Alia Andi, Amer Rajab Zureiq</i>	
Wireless Sensor Network Localization using RSSI and TOA Techniques	752
<i>F. Laassiri, Hager Hadi Bishi, Amaal O. ALthini, Sana Ahmed Abdaljlil</i>	