2025 15th International Conference on Electrical Engineering (ICEENG 2025)

Cairo, Egypt
12-15 May 2025

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Monday, May 12

Monday, May 12 9:00 - 11:00

Conference Opening

Room: 10th Of Ramadan Hall

Monday, May 12 11:30 - 12:30

ICEENG Opening 📇

Prof. Mahmoud Abdalla, "ICEENG Organizing Committee Chair Talk"
Room: Abdelaziz Seif Hall

Monday, May 12 12:30 - 1:30

Keynote Speech 1 📇

"Recent Advancements in Antenna-Based Systems and Channel Modeling"
Keynote Title: "Recent Advancements in Antenna-Based Systems and Channel Modeling"

Invited Speaker: Prof. Mohamed Nabil Srifi
Affiliation: Ibn Tofail University, Morocco
Room: Abdelaziz Seif Hall
Chair: Mahmoud Abdelrahman Abdalla (Military Technical College, Cairo, Egypt)

Monday, May 12 2:30 - 4:30

Modern Control Strategies for Aerospace Systems 📇

Room 2
Chairs: Mohamed Fathy Abo sree (Arab Academy For Science and Technology Engineering Faculty & AASTMT Company, Egypt), Ehab Safwat (MTC, Egypt)

Optimized Attitude Control of a CubeSat Using Reaction Wheels and a Genetic Algorithm-Tuned LQR Controller
Ahmed Shawki (Military Technical College & Satellite Control Center, Egypt); Hossam Hendy (Military Technical College, Egypt); Mahmoud Mohamed Ashry (Arab Academy for Scisnce, Technology, and Maritime Transport, Egypt)
pp. 1-6

CubeSat Attitude Control Using Dynamic Boundary Layer Adaptive Integral Sliding Mode Controller (DBL-ISMC)
Ahmed Ashraf Bedewy (Military Technical College, Egypt); Mohammed Abozied Hassan Abozied (MTC, Egypt); Hossam Hendy (Military Technical College, Egypt)
pp. 7-12

Developing a Numerical Model of Power Distribution and Management Subsystem for Low Earth Orbit Satellite
Ahmed Mohamed Taher Awad Elmayah (Military Technical College, Egypt & Space Technology Center (STC), Egypt); Mohamed Ibrahim and Amr Sarhan (Military Technical College, Egypt); Noha H. El-Amary (Arab Academy for Science, Technology and Maritime Transport, Egypt & AASTMT, Egypt)
pp. 13-18

Monday, May 12 2:30 - 4:30

Biomechanics & Prosthesis Research 🔷

Room 3
Chairs: Manal Abdel Wahed (Egypt), Ahmed F. Elnokrashy (Nile University, Egypt)

Epileptic Seizure Detection with TFI-Based EEG Signal Analysis and Machine Learning Methods
Samar Tuama (Thi-Qar University, Iraq); Wessam Al-Salman (University of Southern Queensland, Australia); Yan Li (School of Mathematics, Physics and Computing, Australia)
pp. 19-23

Synergy-Based Machine Learning for Simultaneous Proportional Control of Prosthetic Hands: Dataset Design and Validation
Hamdy O Farag and Mohammed Ibrahim Awad (Ain Shams University, Egypt); Mohamed Gaber (Birmingham City University, United Kingdom (Great Britain)); Nancy E ElHady (Ain Shams University, Egypt)
pp. 24-29

Incorporating Random Forests and Explainable AI for Upper Motor Function Assessment with the Wolf Motor Function Test
Mohamed Ahmed Abdelaziz and Mohammed Ibrahim Awad (Ain Shams University, Egypt); Shady Ahmed Maged (AinShams University, Egypt); Mohamed Gaber (Birmingham City University, United Kingdom (Great Britain))
pp. 30-35

Evaluating Energy Consumption of Rigidly Controlled Exoskeleton-Assisted Gait in Healthy and Spinal Cord Injury Participants: Pilot study
Mohamed Hamdy Abdelhafiz, Mohammed Ibrahim Awad, Ahmed M Hesham, Huda Hesham, Catherine Nader, Omar Ahmed Saboony, Ghada O. Wassif, Naglaa Gadallah and Shereen I. Fawaz (Ain Shams University, Egypt)
pp. 36-41

A Single-Channel SSVEP-BCI System for Power Wheelchair Control
Ahmed M Gharib and Mohamed A. Abbass (Military Technical College, Egypt)
pp. 42-47

Event Related Potential (P300) Detection using Convolutional Neural Network
Radwa Reda Hossieny (Computer and Information Science Ain Shams University, Egypt); Howida AbdelFattah Shedeed (Ain Shams University - Faculty of Computers, Egypt); Manal Tantawi (Faculty of Computer and Information Science Ain Shams University, Egypt)
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Monday, May 12 2:30 - 4:30

IEEE MTT Egypt Chapter Workshop (1) 🔷

Workshop Title: "MW and mm Wave Technologies for Smart Applications"
Invited Talks: " LOCAL SOLUTIONS, GLOBAL IMPACT: LEVERAGING THE IEEE HTB / SIGHT'S GLOBAL NETWORK FOR SOCIETAL CHALLENGE".
"GLOBAL BEST PRACTICES IN DEVELOPING RESILIENT AND SUSTAINABLE SMART CITIES".
"RADARS, DIGITAL TWINS, AND THE FUTURE: THE UNSEEN HEROES OF TOMORROW'S TECHNOLOGY".
.
Invited Speakers:

Prof. Mohammad Essaaidi, 2025 IEEE SIGHT Committee Chair, General Director of Moroccan School of Science & Engineering (EMSI), Rabat, Morocco.

Prof. George Shaker, Director of the Wireless Sensors and Devices Laboratory, University of Waterloo, Canada.

Room 1

Chairs: Tamer Abuelfadl (Nile University, Egypt), Ayman Eltager (Military Technical Collage, Egypt), Abdel-Razik Sebak (Concordia University, Canada)

LOCAL SOLUTIONS, GLOBAL IMPACT: LEVERAGING THE IEEE HTB / SIGHT'S GLOBAL NETWORK FOR SOCIETAL CHALLENGE
  Mohamed Essaaidi (ENSIAS, Mohammed V University, Morocco)

Global Best Practices in Developing Resilient and Sustainable Smart Cities
  Mohamed Essaaidi (ENSIAS, Mohammed V University, Morocco)

Radars, Digital Twins, and the Future: The Unseen Heroes of Tomorrow's Technology
  George Shaker (University of Waterloo & Spark Tech Labs, Canada)

Monday, May 12 2:30 - 3:30

Keynote Speech 2

Keynote Title: "Sensor Fusion for Autonomy and Mapping"

Invited Speaker: Dr. Mohamed Mostafa
Affiliation: Applanix, Canada
Room 4
Chair: Ahmed M. Kamel (Military Technical College, Egypt)

Monday, May 12 2:30 - 4:30

AI Applications WorkShop

Room: Abdelaziz Seif Hall

Monday, May 12 3:30 - 4:30

ICEENG Panel Meeting (1)

TPC Members
Room 4

Tuesday, May 13

Tuesday, May 13 9:00 - 11:00

UAV Optimization and Adaptive Control

Room 2
Chairs: Mahmoud Mohamed Ashry (Arab Academy for Scisnce, Technology, and Maritime Transport, Egypt), Mohamed Ibrahim (Military Technical College, Egypt)

Comparative Analysis of Optimal Controllers Performance for Unmanned Aerial Vehicles
  Abdulraheem M Ahmdia (Military Technical College, Egypt & 2B, Sudan); Mohamed Ibrahim and Amr Sarhan

(Military Technical College, Egypt); Ahmed Elsaid Abdalla Ahmed (Automatic Control Group MTC, Egypt & Military Technical College, Egypt)
pp. 54-59

Enhancement of Flying Vehicle Tracking Performance Based on Modified Incremental Backstepping

Samy Samir (Military Technical College, Egypt); Ehab Safwat (MTC, Egypt); Hossam Tork (Military Technical College, Egypt); Ahmed Elsaid Abdalla Ahmed (Automatic Control Group MTC, Egypt & Military Technical College, Egypt)
pp. 60-65

Design and Implementation of an Actuation System for a Single plane of Control Rolling Air Frame

Ahmed E. Al-Tarras (Technical Researches Center, Egypt); Islam A Hassan, Sr (Egypt); Maged M Abou elyazed (Technical Researches Center, Egypt)
pp. 66-71

Successive Generalized Dynamic Inversion Control of Helicopter Dynamics

Ameen M Albayhani and Abdulrahman H. Bajodah (King Abdulaziz University, Saudi Arabia)
pp. 72-77

Optimized Route for Fixed Wing Surveillance UAV using Secretary Bird Optimization

Ahmed Sawan, Mohamed Ibrahim, Amr Sarhan and Ahmed Taimour Hafez (Military Technical College, Egypt)
pp. 78-83

Tuesday, May 13 9:00 - 11:00

Microgrids and Smart Systems for Developing Nations 📑

Room 3
Chairs: Sherif Helmy (Nuclear Power Plants Authority (NPPA), Egypt), Hatem Seoudy (Shorouk Academy, Egypt)
Invited Talks

*Invited Talk Title: "The Role of Cross-Border Energy Exchanges in Peacemaking - Opportunities and Challenges"

Speaker: Prof. Mohamed Zakaria Kamh, Ain Shams University, Egypt

Leveraging an Innovative Puma Algorithm for the Optimisation of Energy Management in a Microgrid, Incorporating RES and Energy Storage Devices

Ahmed G Khairalla (Faculty of Engineering, Alexandria University, Egypt); Hesham B. Elrefaie (Alexandira University, Egypt); Hossam Kotb (Alexandria University, Egypt); Kareem Aboras (Alexandira University, Egypt)
pp. 84-89

Optimal Sizing of Hybrid Microgrids Using Weighted Average Algorithm and HOMER

Mahmoud Wahid (Military Technical College, Egypt); Mohamed Abd El Aziz Hasan Abd El Rahman (Ain Shams University, Egypt); Sherif Helmy (Nuclear Power Plants Authority (NPPA), Egypt)
pp. 90-95

Enhancing Voltage Harmonics Mitigation in Microgrids using DBO for FOPID-Based Control and Filter Tuning

Mohamed Maher (Alexandria University, Egypt); Hesham B. Elrefaie and Alaa Hmam El Hamrawy (Alexandira University, Egypt)
pp. 96-101

A Comparative Analysis of Federated and Distributed Theft Detection System in Smart Grids

Hassan Moustafa (Al-Nahda University & Egyptian Electricity Holding Company (EEHC), Egypt); Haitham

Mahmoud (Birmingham City University (BCU), United Kingdom (Great Britain))
pp. 102-107

Tuesday, May 13 9:00 - 11:00

Hardware-Aware AI 📆

Room 1
Chairs: Mohamed Mahmoud Aly Fouad (October 6th University, Egypt), Tarek S. Ghoniemy (Military Technical College, Egypt)

Genetic Algorithm-based Digital Twin Model for Scheduling Multi-request Satellite Imaging
Atef Mohamed (Space Technology Center, Egypt & STC, Egypt); Mahmoud Abdelaziz (Military Technical College, Egypt); Mohamed El Sedfy (Space Technology Center, Egypt); Tamer Rakia (Military Technical College, Egypt)
pp. 108-113

The Complex Interplay of Artificial Intelligence and Internet of Things: Enhancing Functionality Amidst Challenges
Sahar Ismail (Benha University - Faculty of Engineering-Shoubra, Egypt); Shimaa Zeid (Ministry of Communication and Information Technology, Egypt)
pp. 114-119

AI-Based Solution of Quantum Systems with Unknown Underlying Parameters
Istiak Mahmud and Ahmed Abdelhadi (University of North Dakota, USA)
pp. 120-125

CITY Pixels: An Integrated Hardware-Software Framework for Real-Time Interactive Urban Modelling
Ahmed Nady and Ayman Assem (Ain Shams University, Egypt); Muhamed Elalfy (Ain Shams University (ASU), Egypt); Mohamed Ezzeldin and Mohamed Darwish (Ain Shams University, Egypt)
pp. 126-131

Analysis of Sampling Strategies for Multi-Task Learning in Transformer Models
Anirudh Lakhotia, Akash Kamalesh, Nischal Helagally Shantharaju, Prerana Sanjay Kulkarni and Gowri Srinivasa (PES University & Center for Pattern Recognition, India)
pp. 132-137

Survival of the Smallest: Genetic Algorithms for LLM Compression
Anagha Siddheshwar, Anirudh G Joshi, Agnel Elizabeth, Arnab Karmakar and Badri Prasad (PES University, India)
pp. 138-142

Tuesday, May 13 9:00 - 11:00

Photonics Eng. 📆

Room 4
Chairs: Taher Bazan (Egyptian Academy for Engineering and Advanced Technology, Egypt), Hussein Eissa Abdelsalam Kotb (Ain Shams University, Egypt)
Invited Talks

*Invited Talk Title: "Overview on LIFI: a Future Perspective of Wireless Communications"

Speaker: Prof. Jala Mahmoud El-Azab, Cairo University, Egypt

*Invited Talk Title: "Optical Fiber Static and Dynamic Sensing"

Speaker: Prof. Ahmed Hisham Morshed, Ain Shams University, Egypt

Fluorescence-based Optical Characterization of Protective Materials Using Spectral Analysis

Amr Saber (MTC, Egypt); Alaaeldin Mahmoud (Military Technical College, Egypt); Yaser Elsharkawy (MTC, Egypt)
pp. 143-147

Assessing the destructive potential of pulsed green light lasers on composite materials in UAV structures: a feasibility study

Amr Saber (MTC, Egypt); Alaaeldin Mahmoud (Military Technical College, Egypt); Yaser Elsharkawy (MTC, Egypt)
pp. 148-153

Tuesday, May 13 9:00 - 1:30

Poster Session 1

Room: Main Hall Entrance
Chairs: Ahmed A. Abouelfadl (Military Technical College, Egypt), Ahmed M. Elelimy Abounemra (Military Technical College, Egypt), Hany Mostafa Mohamed (MTC, Egypt), Ahmed Nader (Cairo University, Egypt)

Cascaded Sliding Mode Control for SCARA Manipulator with Actuator Dynamics

Mohamed A Ibrahim (German University in Cairo, Egypt); Omar M. Shehata (Multi-Robot Systems (MRS) Research Group, German University in Cairo, Egypt); Hesham Hamed Ibrahim (German University in Cairo, Egypt)
pp. 154-159

An Efficient Wideband Doherty Power Amplifier Designed based on Harmonic Controlled Matching Network for S-Band Telemetry Applications

Omar M. E. Eltager and Ahmed M. Elelimy Abounemra (Military Technical College, Egypt)
pp. 160-163

Advancing Arabic Inner Speech Recognition with Machine Learning and Deep Learning

Aya E Ahmad (Systems and Biomedical Engineering, Cairo University, Egypt); Habiba Diaa Hafrag (Egypt-Japan University of Science and Technology, Egypt); Ziad Ahmed Meligy (Systems and Biomedical Engineering, Cairo University, Egypt); Heba Ali Abdelbary (Center for Informatics Science (CIS) Nile University, Egypt); Sahar Selim Selim (Nile University, Egypt)
pp. 164-169

A Comparative Study of AI-Driven Approaches for Breast Malignance Detection Exploiting Infrared Thermography

Ashar Seif Al-Nasr (Cairo University, Egypt); Mohamed Aref (Egyptian Armed Forces, Egypt); Yasser Sabry (Ain Shams University, Egypt)
pp. 170-174

Goose Optimization for Dimensioning Fractional-Order Proportional-Integral Sequential Tilt Control in efficient and reliable Charging System of EV

Omnia Albadry (Sohag University, Egypt & Technology and Education, Egypt); Alaa A. Mahmoud (Sohag University, Egypt); Ahmed Hafez (Assiut University, Egypt)
pp. 175-179

Impact of Energy Saving Loads on Nuclear Facility Electrical Network

Amir A. Wadoud and Alaa A. Saleh (Egyptian Atomic Energy Authority, Egypt); Mohamed Y.M. Mohsen (Military Technical College, Egypt); Atef El-Taher (Al-Azhar University, Egypt); Mohamed A.E. Abdel-Rahman (Military Technical College, Egypt)

pp. 180-184

Modelling AC Induction Motor Control Circuit Using Bond Graph Techniques

Amir R. Ali (The German University in Cairo (GUC), Egypt & PI of the Applied-Science & Robotics Laboratory for Applied-Mechatronics ARAtronics Laboratory, Egypt); Aya ElNahas (The German University in Cairo, Egypt); Ahmed Magdy and Mohamed Zinal (German University in Cairo, Egypt)

pp. 185-189

Optical MTM-based Energy Harvesting

Abdelmegid Allam, Eyad Sameh and Yassin Nezar (German University in Cairo, Egypt); Mohamed Atef Abbas (Arab Academy for Science, Technology and Maritime Transport, Egypt)

pp. 190-192

Direction of Arrival Estimation Approach Based on Gauss-Newton Method

Ebraheem Alenezi (Assiut University, Egypt); Osama Elnahas Helaly (EJUST, Egypt); Can Pei (Shenzhen Polytechnic University, China); Mostafa Youssef (Assiut University, Egypt)

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Tuesday, May 13 9:00 - 11:00

IEEE MTT Egypt Chapter Workshop (2) 📇

Workshop Title: "MW and mm Wave Technologies for Smart Applications"
Invited Talks: "GREEN COMMUNICATIONS IN EGYPT".
"Engineered Surfaces for mm Wave Antennas and Radar Scattering Control".

Invited Speakers:
Senior Engineer: Adel Elsherif, Head of Data Center at e&, Cairo, Egypt..
Prof. Abdelrazik Sebak, P.Eng., IEEE Fellow, EIC Fellow, Tier I Concordia University Research Chair, Canada.
Room: Abdelaziz Seif Hall
Chairs: Esmat Abdallah (Former President of the Electronics Research Institute, Egypt), Ayman Eltager (Military Technical Collage, Egypt)

GREEN COMMUNICATIONS IN EGYPT

Adel Elsherif (Etisalat Egypt, e&, Egypt)

Engineered Surfaces for mm Wave Antennas and Radar Scattering Control

Abdel-Razik Sebak (Concordia University, Canada)

Tuesday, May 13 11:30 - 1:30

Intelligent Control for Power and Industrial Applications 📇

Room 2
Chairs: Noha H. El-Amary (Arab Academy for Science, Technology and Maritime Transport, Egypt & AASTMT, Egypt), Mohamed Ibrahim (Military Technical College, Egypt)

Real-Time Digital Twin-Driven Optimization of Industrial Machinery

Amir R. Ali (The German University in Cairo (GUC), Egypt & PI of the Applied-Science & Robotics Laboratory for Applied-Mechatronics ARAtronics Laboratory, Egypt); Hossam Kamal (German University in Cairo (GUC), Egypt)
pp. 199-204

Modeling, Validation and Control of Pan Tilt Table

Islam A Hassan, Sr (Egypt); K M Ahmed and Ahmed E. Al-Tarras (Technical Researches Center, Egypt)
pp. 205-210

Performance Analysis of Various Compensation Topologies in Wireless Power Transfer for Electric Vehicles

Roaa Haggy and Peter Makeen (The British University in Egypt (BUE), Egypt)
pp. 211-216

Robustness of UAV Flight Control System Via Modified Incremental Nonlinear Dynamic Inversion

Ahmed Mohsen Sabra and Ahmed Taimour Hafez (Military Technical College, Egypt); Hany Mostafa Mohamed (MTC, Egypt)
pp. 217-222

Tuesday, May 13 11:30 - 1:30

Power Grid Renovation and Renewable Integration 📇

Room 3
Chairs: Wael Abdelfattah (Higher Institute of Engineering, El-Shorouk Academy, Egypt), Mohamed Zakaria Kamh (Ain Shams University, Egypt)
Invited Talks

*Invited Talk Title: "Innovative Renewable Energy Green Gas for Grids (g3) as an Alternative to SF6"

Speaker: Prof. Mohamed Samy, Bani Suif University, Egypt

Comparative Analysis of Enhanced Phase-Locked Loop (PLL) Approaches for Renewable Energy Resources Integration

Mostafa Abdo and Mohammed Yehia Amer (Military Technical College, Egypt); Sherif Helmy (Nuclear Power Plants Authority (NPPA), Egypt)
pp. 223-228

Study of STATCOM Impact on Voltage Stability in a Grid Connected to Wind Power Generator under Abnormal Conditions

Ghada Mahmoud Ibrahim (HIF, Egypt)
pp. 229-234

Optimized Dynamic Economic Dispatch incorporating Dynamic Generation Capacity Using Teaching-Learning-Based Optimizer

Mahmoud Ibrahim Mosaad, Ali-M. Yousef and Ahmed Hafez (Assiut University, Egypt)
pp. 235-240

Leveraging Battery Energy Storage System to Enhance Voltage Stability: A Case Study of Hail South Network

Mohammad Sulaiman Alrashid (King Saud University, Saudi Arabia); Majed A. Alotaibi (King Saud University, Saudi Arabia & Saudi Electricity Company Research Chair, Saudi Arabia)
pp. 241-246

Tuesday, May 13 11:30 - 1:30
IoT Security 📱

Room 1
Chairs: Nahla Belal (Arab Academy for Science, Technology, and Maritime Transport & College of Computing and Information Technology, Egypt), Khaled Metwally (Militray Technical College, Egypt)

Securing Information in an adaptive Signature Watermark
Gamal Fahmy (Galala University, Egypt); Abdelrahman Desoky (Claflin University, Egypt); Hany Ammar (West VirginiaUniversity & Cairo University, USA); Sameh Hassanien Basha (Cairo University, Egypt & Galala University, Egypt)
pp. 247-252

Hybrid Feature Selection for Efficient Machine Learning-Based Intrusion Detection in IoT Networks
Mohammed Nagah (Newgiza University (NGU), Egypt); Tamer Mekkawy, Ashraf Mahran and Ahmed Elliethy (Military Technical College, Egypt)
pp. 253-258

Hybrid Deep Learning-Based Autoencoder-DNN Model for Intelligent Intrusion Detection System in IoT Networks
Hesham Kamal Khalil and Maggie Mashaly (German University in Cairo, Egypt)
pp. 259-264

Adaptive Distributed Ledger Framework for Protecting IoT Networks
Mohamed Abo-Soliman (Ain Shams University, Egypt & Nile University, Egypt); Eman Shaaban and Karim Emara (Ain Shams University, Egypt)
pp. 265-271

Optimized Feature Selection for Enhanced Network Attack Detection Using Bat Algorithm
Mosleh Abualhaj (Al-Ahliyya Amman University, Jordan); Ali Abdurrazaq (University of Mosul, Iraq); Omar Mohammad Almomani (Al-Ahliyya Amman University, Jordan); Mohammed Anbar (Universiti Sains Malaysia, Malaysia)
pp. 272-276

Assessing Robustness and Resistance to Attacks of an Authentication System Based on OpenID Connect Protocol and Ethereum Blockchain
Assane Ilboudo (Université Joseph KI-ZERBO, Burkina Faso); Didier Bassolé (Université Joseph Ki-Zerbo, Burkina Faso & Laboratoire de Mathématiques et d'Informatique (LAMI), Burkina Faso); P. Justin Kouraogo (Ecole de Technologie Supérieure University of Québec at Montréal, Canada); Gouayon Koala (Université Joseph KI-ZERBO, Burkina Faso); Oumarou Sié (University Ouaga 1 Professeur Joseph Ki-Zerbo, Burkina Faso)
pp. 277-282

Tuesday, May 13 11:30 - 1:30
Communications and Cyber Security 📱

Room 4
Chairs: Ali Elmoghazy Ali (Military Technical College, Egypt), Fatma A. Newagy (Ain-Shams University, Egypt)
Invited Talks

*Invited Talk Title: "Quantum Key Distribution on 6G Mobile Network Planning"

Speaker: Prof. Hesham M. El-Badawy, Ministry of Communication, Egypt

*Invited Talk Title: "Intelligent Systems: Current and Future Trends"

Speaker: Prof. Ahmed Elsherbini, Faculty of Engineering, Cairo University -- Chairman of the ICT Research Council, Academy of Scientific Research, Egypt

Leveraging SDN for Efficient Gateway Selection Approach in HTS Networks

Mahmoud Abdelmohsen Mahmoud and Mohamed Hussein (Military Technical College, Egypt); Essam Abd Elwanees (Communications Engineering Military Technical College, USA); Ashraf Diaa (Military Technical College, Egypt)
pp. 283-288

Multi-Tier Honeypot for Resilient Network Security

Khaled Nasser Salama, Nader Atef Sdeek, Ahmed Bendary, Amr Abdelaziz and Ashraf Diaa Elbayoumy (Military Technical College, Egypt)
pp. 289-294

Tuesday, May 13 11:30 - 12:30

Keynote Speech 3 📑

Keynote Title: "Nanomedicine and Innovative Smart Nanosystems for Disease Treatment and Diagnosis: From Lab to Society"

Invited Speaker: Prof. Ibrahim M. El-Sherbiny
Affiliation: Zweil City, Egypt
Room: Abdelaziz Seif Hall
Chair: Mohamed Esmail Karar (Menoufia University, Egypt)

Tuesday, May 13 12:30 - 1:30

Keynote Speech 4 📑

Keynote Title: "Novel optical Metasurface for small Medical and Environmental applications"

Invited Speaker: Prof. Mohamed A. Swillam
Affiliation: American University in Cairo, Egypt
Room: Abdelaziz Seif Hall
Chair: Mahmoud Abdelrahman Abdalla (Military Technical College, Cairo, Egypt)

Tuesday, May 13 2:30 - 4:30

Advanced Modeling and Control for High-Dynamic Vehicles 📑

Room 2
Chairs: Yehia Zakria Elhalwagy (Military Technical College, Egypt), Hossam Hendy (Military Technical College, Egypt)

Mathematical Modeling and Analysis of High-Dynamic Flying Vehicles

Ahmed M.Khalifa, Mostafa S.Mohamed and Mohammed Abozied Hassan Abozied (MTC, Egypt)
pp. 295-300

Explicit Generalized Inversion-based Eigenstructure Assignment Formula and Application to Rotorcraft Control

Abdulmajeed Mathkar Al-Qarni and Abdulrahman H. Bajodah (King Abdulaziz University, Saudi Arabia)
pp. 301-305

Vehicle Side-Slip Angle (SSA) Model Based Observer Enhancement Via NN-based SSA Virtual Sensors

Mohamed E. Shaaban (German University in Cairo, Egypt); Omar M. Shehata (Multi-Robot Systems (MRS) Research Group, German University in Cairo, Egypt); Elsayed I. Morgan and Catherine Elias (German University in Cairo, Egypt)
pp. 306-311

Tuesday, May 13 2:30 - 4:30

Renewable & Hybrid Energy Systems 📇

Room 3
Chairs: Amged S. Elwakeel (Nuclear Power Plants Authority, Egypt), Mohamed Samy (Beni-Suef University Beni-Suef, Egypt)

Time Series Analysis for Solar Irradiance Forecasting: A Systematic Review

Asdaqul Khair (Gadjah Mada University, Indonesia); Lesnanto Multa Putranto and Dyonisius Dony Ariananda (Universitas Gadjah Mada, Indonesia)
pp. 312-317

Impact of Egyptian Weather Conditions on Solar Photovoltaic Efficiency

Tarek Ihab Abdelsalam and Ahmed E. Almaz (The British University in Egypt, Egypt)
pp. 318-323

Hybrid Energy System Planning: Optimizing Solar and Wind Power for Maximum Efficiency and Cost Reduction

Seif Mahdi, Abdulrahman Yasser, Omar Hashem, Ahmed Hatem and Jessica Magdy (German University in Cairo, Egypt); Omar M. Shehata (Multi-Robot Systems (MRS) Research Group, German University in Cairo, Egypt)
pp. 324-329

Implementing a Predictive Framework for Dust Accumulation on Solar Panels

Youssef Ellethy and Yasmine Abdalla Zaghloul (German International University, Egypt)
pp. 330-333

Day-Ahead Weather and Load Forecast using Machine Learning: Comparative Analysis

Abdelaziz Elwakil (Arab Academy for Science, Technology, and Maritime Transport, Egypt); Rania Assem Ibrahim (Co-Author, Egypt); Ahmed M Abdelrahim (Arab Academy for Science, Technology, and Maritime Transport, Egypt); Nahla Ezzeldin Zakzouk (Arab Academy for Science and Technology and Maritime Transport, Egypt)
pp. 334-339

Performance Analysis of Dual-Axis Solar Tracking System Using Fuzzy Logic and Optimized PID Control Strategies

Mohamed Ibrahim Taha (October University for Modern Sciences and Arts (MSA), Egypt); Mohamed Atef Kamel (Military Technical College, Egypt & Concordia University Montreal, Canada); Ehab Said (Military Technical Collage, Egypt); Wael Elmayah (Military Technical College, Egypt)
pp. 340-345

Tuesday, May 13 2:30 - 4:30
Bridging AI, Security, and Code 📑

Room 1
Chairs: Ayman A. Abdel-Hamid (Arab Academy for Science, Technology, and Maritime Transport, Egypt), Ahmed Salem (AAST, Egypt)

Obfuscated File-less malware threats: Recent analysis and detection approaches Based on Memory forensics
Mohamed Zakaria, Mohamed S. Mohamed and Sherif Hussein (Military Technical College, Egypt); Gouda I. Salama (Military Technical Colleagues, Egypt)
pp. 346-351

Defining a New Metric for Detecting Bias in Software Systems: Towards Ethical Software Engineering
Ahmed Abdelraheem (Zewail City of Science, Technology and Innovation, Egypt); Malak Elbanna (Zewail University of Science and Technology, Egypt); Mohamed Elnaggar (Zewail City of Science, Technology and Innovation, Egypt); Doaa Shawky (Zewail City of Science and Technology, Egypt)
pp. 352-357

CS-NIDS: Network Intrusion Detection Based on Cross-Silo Federated Learning
Maged Abdelaty (City of Scientific Research and Technological Applications (SRTA-City), Egypt)
pp. 358-363

The Development of a Shipping Aggregator Platform for Package Delivery Using the Design Thinking and Moscow Approach
Fahrizal Adi Wibowo and Nur Aini Rakhmawati (Institut Teknologi Sepuluh Nopember Surabaya, Indonesia)
pp. 364-369

Strategies For Successful Futures Trading: Leveraging Crude Oil Price Forecasts
Achintya Krishna, Jugal Kothari, Joshita Gautam and Archishman VB (PES University, India); Gowri Srinivasa (PES University, India & Center for Pattern Recognition, India)
pp. 370-375

Tuesday, May 13 2:30 - 4:30
Biomedical Signal & Image Processing 📑

Room 4
Chairs: Manal Abdel Wahed (Egypt), Mohamed Esmail Karar (Menoufia University, Egypt)

Decentralized Medical Record Model Using Composable NFT: Achieving Data Security, Interoperability, and Privacy through Granular Data Access
Damary Sabrina Amaracitra and Andry Alamsyah (Telkom University, Indonesia)
pp. 376-381

Advanced Optical Imaging and Machine Learning for Breast Cancer Diagnosis: Wavelength Differentiation and Clinical Applications
Hossam Mostafa Ibrahim and Mohamed Hisham Fouad Aref (Egyptian Armed Forces, Egypt); Abdallah Abdelkader Hussein (Kobri El-Kobba Complex Hospital, Egypt); Mohamed A. Abbass (Military Technical College, Egypt); Ahmed M Salaheldin (Shorouk Academy, Egypt); Yasser Sabry (Ain Shams University, Egypt); Neven Saleh (Future University, Egypt); Amr Sharawi (Cairo University, Egypt)
pp. 382-387

Patch nnU-Net for High-Resolution Semantic Segmentation of Dental X-ray Images

Mennatollah Elkammah (Faculty of Engineering, Alexandria University, Egypt); Ayman Khalafallah and Marwan Torki (Alexandria University, Egypt)

pp. 388-393

A Hybrid Deep Learning and Machine Learning Framework for Breast Cancer Detection in Infrared Thermography

Mostafa Hamed Mohamed and Mohamed Hisham Fouad Aref (Egyptian Armed Forces, Egypt); Ahmed M Salaheldin (Shorouk Academy, Egypt); Ahmed M (Awadallah, Egypt); Neven Saleh (Future University, Egypt); Amr Sharawi (Cairo University, Egypt)

pp. 394-399

A Comprehensive Study on Enhanced Brain Diseases Diagnosis with Microwave Imaging Techniques Using Multi Antenna Systems

Sara Alsawy (Arab Academy for Science and Technology Smart Village, Egypt); Ahmed Sayed Ismail Amar (University of Bradford, United Kingdom (Great Britain)); Mohamed Fathy Abo sree (Arab Academy For Science and Technology Engineering Faculty & AASTMT Company, Egypt); Darwish Mohamed (Arab Academy for Science and Technology, Egypt)

pp. 400-407

Tuesday, May 13 2:30 - 4:30

Keynote Speech 5 📑

Keynote Title: "Non-volatile reconfigurable metasurface for EM manipulation and control"

Invited Speaker: Prof. Zhirun Hu
Affiliation: University of Manchester, UK
Room: Abdelaziz Seif Hall
Chair: Mahmoud Abdelrahman Abdalla (Military Technical College, Cairo, Egypt)

Wednesday, May 14

Wednesday, May 14 9:00 - 11:00

Wireless Communications 📑

Room 2
Chairs: Amr Abdelaziz (The Ohio State University & Military Technical College, USA), Medhat M Mokhtar (High Institute for Engineering & Technology at Obour, Egypt)

Enhanced Aeronautical Communications: RS-LDPC Performance with FBMC Modulation

Mohamed EL-Sayed (Egypt); Amr Nagy (Military Technical College Egypt, Egypt); Mahmoud Abdelaziz (Military Technical College, Egypt); Alaa Eldin Rohiem (MTC, Egypt)

pp. 408-413

Performance Evaluation of OFDM Multi-Carrier Systems Using Long Short-Term Memory Networks

Shahzad Hassan and Mohammed Al Siy (Military Technological College, Oman); Salman Saadat (University of Doha for Science and Technology, Qatar); Noshaba Tariq (Cignet Network Consultancy and Training, Pakistan)

pp. 414-419

Performance of Space-Air-Ground FSO Communications with Different Modulations

Hassan Ahmed (Military Technical College, Egypt); Ramy Samy Zaghloul (Space Technology Center, Egypt); Ahmed Bendary and Alaa Eldin Rohiem (Military Technical College, Egypt)

pp. 420-425

Wednesday, May 14 9:00 - 11:00

Techniques of Electromagnetic Manipulation for Various Applications 📧

Room 3
Chairs: Tamer Abuelfadl (Nile University, Egypt), Abdelmegid Allam (German University in Cairo, Egypt)
Invited Talks

*Invited Talk Title: "New era of emerging technologies for healthcare systems"

Speaker: Prof. Chaïmaâ Kissi, Ibn Tofail University, Moraco

Optimizing Radar Placement over Irregular Terrain for Coverage Area Enhancement Using Particle Swarm Optimization

Hazem Kamel (Military Technical College, Egypt)

pp. 426-430

Design and Fabrication of Multi-Band Mobile Handset Antennas

Hazem Banna, Emad Robin and Nelly Mohammed (Modern Academy for Engineering and Technology, Egypt)

pp. 431-435

Coaxial Feeding for a Chern Photonic Topological Insulator Waveguide

Mostafa M Elesawy (Military Technical College, Egypt); Mohamed Hagag (Military Technical College, Egypt & Purdue University, USA); Hany Mostafa Mohamed (MTC, Egypt); Ahmed Abdelraheem (Military Technical College, Egypt)

pp. 436-439

Wednesday, May 14 9:00 - 11:00

AI-Powered Vision 📧

Room 1
Chairs: Gouda Mohamed (EAF, Egypt), Aliaa Youssif (Arab Academy for Science and Technology, Egypt)

Comprehensive Performance Evaluation of YOLOv8-11 Models for Object Recognition in Remote Sensing Imagery

Mohamed Fathy (Military Technical College, Egypt); Mohamed Elhaddad (University of Victoria, Canada & Military Technical College, Egypt); Mohamed A. Elshafey (Computer Engineering and Artificial Intelligence, Military Technical College, Cairo, Egypt)

pp. 440-445

Intrusion Detection in IoT Networks Using Deep Learning: A Comprehensive Approach

Abdallah S. Elnamaky and Emad Elsamahy (Arab Academy for Science, Technology, and Maritime Transport, Egypt); Samir G. Sayed (Helwan University, Egypt & NTRA, Egypt); Ahmed Salem (AAST, Egypt)

pp. 446-451

A comparative study between GAN and diffusion models for child image generation from parents' images

Mohamed Emara and Mohamed Farouk (Arab Academy for Science Technology and Maritime Transport, Egypt);

Mohamed Waleed Fakhr (Arab Academy for Science and Technology & AAST, Egypt)
pp. 452-457

Detecting Bias in Arabic Political News: A Transformer-Based Ensemble Stacking Approach
Ahmad Mohammed Abdelhameed (Nile University, Egypt & Fayoum University, Egypt); Ensaf H Mohamed (Nile Univ, Egypt & Helwan Univ, Egypt); Walaa Medhat (Nile University, Egypt)
pp. 458-464

Automated Detection of Plus Disease From Infant Retinal Images
Kaushik J, Saad Bin Khalid, Sathvik Vittal and Srujan Muralidhar (PES University, India); Anand Vinekar (Narayana Nethralaya Postgraduate Institute of Ophthalmology, India); Gowri Srinivasa (PES University, India & Center for Pattern Recognition, India)
pp. 465-470

Wednesday, May 14 9:00 - 11:00

Intelligent Guidance and Planning of Multi-UAV Systems 🗔

Room 4
Chairs: Mohammed Abozied Hassan Abozied (MTC, Egypt), M. Saeed Darweesh (Nile University, Egypt)

Hybrid Regularized Time-to-Go Estimation for Robust Intercept Guidance
Islam Hosny Elnady, Sr and Mohammed Abozied Hassan Abozied (MTC, Egypt); Ahmed M. Kamel and Yehia Zakria Elhalwagy (Military Technical College, Egypt)
pp. 471-476

Teaching Learning Based Optimization for Multi-Agent Multi-Target Assignment
Muaaz Abdulrahem Shbo, M.Shbo (MTC, Egypt); Mohamed Ibrahim and Ahmed Taimour Hafez (Military Technical College, Egypt); Ahmed Elsaid Abdalla Ahmed (Automatic Control Group MTC, Egypt & Military Technical College, Egypt)
pp. 477-482

Optimized Area Coverage Path Planning In Complex Environment Using Neural Network
Mahmoud Elfoly, Mohamed Ibrahim, Hossam Hendy and Ahmed Taimour Hafez (Military Technical College, Egypt)
pp. 483-488

Cooperative Control of Multiple UAVs Based on Optimized Fractional-Order PID Controller
Bassam Elbasueny (Military Technical College, Egypt); Mohamed Atef Kamel (Military Technical College, Egypt & Concordia University Montreal, Canada); Ehab Said (Military Technical Collage, Egypt); Ibrahim Elshrif (MTC, Egypt)
pp. 489-494

Helicopter Control using Parameter-Dependent Ackermann-Greville Pole Placement Formula
Ameen M Albayhani and Abdulrahman H. Bajodah (King Abdulaziz University, Saudi Arabia)
pp. 495-499

Wednesday, May 14 9:00 - 1:30

Poster Session 2

Room: Main Hall Entrance

Chairs: Tamer Mekkawy Accepted (MTC, Egypt), Ahmed Fawzy Daw, Sr (MSA University, Egypt), Ahmed Elrewainy (Military Technical College, Egypt), Mohamed Naguib (The Ohio State University, USA)

Software-Defined Radio-Based Simulation and Processing of GPS L1 Signals for LEO Satellites Navigation
Ahmed Abdelhady Ahmed, Hossam Hendy, Amr Abd el azeem Ali and Ahmed M. Kamel (Military Technical College, Egypt)
pp. 500-505

IMU Denoising Using Feedforward Neural Networks for Enhanced Attitude Estimation Accuracy
Hany Mamdouh (Military Technical College, Egypt); Mohammed Abozied Hassan Abozied (MTC, Egypt); Yehia Elhalwagy (MSA University, Egypt); Ahmed M. Kamel (Military Technical College, Egypt)
pp. 506-511

Route to Clean Cities: Waste Collection Optimization with UGVs
Farah Ahmed, Hoor Amr, Marwan Khalil, Maryam Mohamed, Youssef Amir, Ziad Yasser and Jessica Magdy (German University in Cairo, Egypt); Omar M. Shehata (Multi-Robot Systems (MRS) Research Group, German University in Cairo, Egypt)
pp. 512-517

Harmonizing Recurrent and Attention Mechanisms: The Fused Gate Model
Abdelrahman Mohamed Hussein Mohamed (Arab Academy for Science, Technology and Maritime Transport, Egypt & Independent Researcher, Egypt); Shady Zahran (Technical Researches and Development, Canada)
pp. 518-522

AI-Driven Deep Learning and Robotic Arm System for Post-Harvest Sorting
Yousef Abdelhafeez, Amr Haddad, Suhaila Hussien, Ahmed Ramadan, Aya Mohamed, Shahd Abdelrady and Nashwa El-Bendary (Arab Academy for Science, Technology & Maritime Transport, Egypt)
pp. 523-528

Using Virtual Reality to Simulate a Classroom For Online Learning
Abdelghafar R. Elshenaway, Alaa Hussien, Youssef Ehab Aboul Sheour, Mohamed Mohsen Elhalfway, Youssef Hany Mohamed, Mahmoud Ali Elgohary and Mohammed Ehab Abdelati (Pharos University in Alexandria, Egypt)
pp. 529-534

Multi-Label Emotion Detection in Dialectal Arabic and English Using DeepSeek and SILMA AI
Khloud Khaled Elsayed (Nile University, Egypt); Ensaf H Mohamed (Nile Univ, Egypt & Helwan Univ, Egypt); Walaa Medhat (Nile University, Egypt)
pp. 535-540

The Impact of Quantum Noise on Shor's Algorithm and Its Cryptographic Applications
Wael Mohamed Fawaz Abdel-Rehim (Suez University, Egypt & King Salman Internationl University, Egypt)
pp. 541-546

Dataset Preprocessing Leveraging Vision Language Models: Storytelling for Accident Detection and Description
Mohamed Yossri Elwaly, Amgad Abdo and Aly Ahmed Sewelam (Alexandria University, Egypt); Sarah Elshamy and Asmaa Zayed (Pharos University in Alexandria, Egypt); Mohamed Elsayed Elsayed (Pharos University in Alexandria & Arab Academy for Science Technology & Maritime Transport, Egypt); Mohamed Abdou (Alamein International University, Egypt); Mohamed Saleh (Pharos University, Egypt)
pp. 547-552

Chronic Kidney Disease Detection Augmented with Hybrid Explainable AI

   Mohamed Desoky and Nada Gamal ElAdl (Galala University, Egypt); Tamer Abuhmed (Sungkyunkwan University, Korea (South)); Shaker El-Sappagh (Galala University, Egypt)
   pp. 553-558

Wednesday, May 14 9:00 - 11:00

ICEENG Panel Meeting (2)

TPC Members
Room: Abdelaziz Seif Hall

Wednesday, May 14 11:30 - 1:30

Signal Processing & Radar Applications

Room 2
Chairs: Hossameldin Aboubakr Badr Hassan (Military Technical College, Egypt), Ahmed E. El-Mahdy (German University in Cairo, Egypt)
Invited Talks

*Invited Talk Title: "Polarization Imaging in Computer Vision"

Speaker: Associated Prof. Hamada Rizk, Osaka University, Japan

   Scalable Cell-Free Massive MIMO for Indoor Industrial IoT Factory with Multi-Antenna Users

   Ahmed Hesham Mehana (Cairo University, Egypt); Amel Mohamed Mahmoud (Cairo University, Egypt & Canadian International College, Egypt); Yasmine Fahmy (Cairo University, Egypt)
   pp. 559-566

   Optimized Multi-Radar Hand Gesture Recognition: Robust MIMO-CNN Framework with FPGA Deployment

   Taher S. Ahmed and Fathy Ahmed (Military Technical College, Egypt); Magdy Elbahnasawy (Technical Research Center, Egypt); Ahmad Fouad Youssef (Military Technical College, Egypt)
   pp. 567-572

   Precise Range-Doppler Estimation in LFM Pulsed MIMO Sonar Systems

   Ahmed Yasser (Military Technical College, Egypt & MTC, Egypt); Hossam Tork, Adel Abdallah and Ahmad Fouad Youssef (Military Technical College, Egypt)
   pp. 573-578

Wednesday, May 14 11:30 - 1:30

Radio Wave Propagation in Guided and Unbounded Media

Room 3
Chairs: Dalia N. Elsheakh, Jr (Electronics Research Institute & ElTahrir St. Dokki Giza, Egypt), Ahmed Ibrahim (El-Minia University, Egypt)
Invited Talks

*Invited Talk Title: "Time-Modulated Frequency Diverse Array for Wireless Power Transmission"

Speaker: Prof. Saber Zein Eldien, Faculty of Electronic Engineering, Menoufia University, Egypt

Comparative Analysis of Particle Swarm Optimization (PSO) and Genetic Algorithms (GA) for Optimal Radar Coverage Area Maximization

Hazem Kamel and Ahmed Assem El-Kashef (Military Technical College, Egypt)

pp. 579-584

A Compact Circularly Polarized Conformal GPS Antenna for Vehicle Tracking Applications

Mohamed El Atrash (MSA University); Duria Y. Khalil (MSA University, Egypt); Mahmoud Abdelrahman Abdalla (Military Technical College, Cairo, Egypt)

pp. 585-588

A New LCRLH-Based Reconfigurable Phase Shifter for High-Resolution Applications

Ahmed Mohamed Zinhum, Ahmed Fawzy Daw, Sr and Hazem Amr Youssef (MSA University, Egypt); Mahmoud Abdelrahman Abdalla (Military Technical College, Cairo, Egypt)

pp. 589-592

Wednesday, May 14 11:30 - 1:30

New AI Trends 📑

Room 1

Chairs: Mohamed A. Elshafey (Computer Engineering and Artificial Intelligence, Military Technical College, Cairo, Egypt), Essam H. Houssein (Faculty of Computers and Information - Minia University, Egypt)

Improving Arabic Image Captioning with Vision Language Models

Abdelrahman Mohamed Sayed (Military Technical College, Egypt); Mohamed Elhaddad (University of Victoria, Canada & Military Technical College, Egypt); Gouda I. Salama (Military Technical Colleagues, Egypt); Aiman Saad (MTC, Egypt)

pp. 593-598

PETRA: A Personalized Educational Tutoring Tool for Recursive Assistance Leveraging Multi-model LLMs for Dynamic Programming Learning

Dalia Walid Hewedy (German University in Cairo, Egypt); Aya Salama Abdelhady (GUC, Egypt)

pp. 599-604

A Hybrid Sentiment Analysis Model for Enhanced Stock Market Movement Predictions

Karim Salaheldeen (Arab Academy for Science, Technology and Maritime Transport, Egypt); Amani Saad and Mazen Nabil Elagamy (Arab Academy for Science and Technology, Egypt); C. Fathy (Computer Engineering Department, College of Engineering and Technology, Arab Academy for Science and Technology (AAST), Alexandria, 1029, Egypt, Egypt)

pp. 605-611

ETL: Ensemble-at-Training for Low-cost Open-source Large Language Models

Amr Zaki (Queen's University, Canada); Mahmoud Khalil (Computers and Systems Engineering Dept., Ain Shams University, Egypt); Hazem Abbas (Ain Shams University, Egypt)

pp. 612-617

AI-Powered Autism Screening: Leveraging Gain Ratio Feature Selection for Improved Machine Learning Models

Qusai Yousef Shambour and Mosleh Abualhaj (Al-Ahliyya Amman University, Jordan)

pp. 618-623

Wednesday, May 14 11:30 - 1:30

Emerging Trends in Power Electronics for energy distribution and automotive techniques 📇

Room 4
Chairs: Abdelfattah Eliwa (Military Technical College, Egypt), Ibrahim Safwat (MTC, Egypt)

Design and Performance Optimization of a Low-Power Half-Bridge LLC Resonant Converter Using GaN FETs
Isuru Munasinghe and Ashen Rodrigo (University of Moratuwa, Sri Lanka)
pp. 624-629

A Grid-Tied Photovoltaic-Battery System for Bidirectional Electric Vehicle Charging
Ossama Talal Dankar, Mohamed Tarnini and Abdallah El Ghaly (Beirut Arab University, Lebanon); Nazih Moubayed (CRSI, Faculty of Engineering, Lebanese University, Lebanon); Khaled Chahine (American University of the Middle East, Kuwait)
pp. 630-636

Optimizing Prony's Order for Filtering Non-Periodic Components in Signals
Byron Orlando Palate (Sao Paulo University & Independent Consultant, Ecuador); Celestino Kalueyo (University of Sao Paulo, Brazil); Pedro Sato de Aragão S Aragão (Universidade de São Paulo, Brazil); Silvio Giuseppe and Nelson Kagan (University of Sao Paulo, Brazil); Carlos Frederico Meschini Almeida (University of São Paulo - USP, Brazil)
pp. 637-641

Introducing the Entropy as a Fundamental Property of the Electric Conductors
Salama Abdelhady (Aswan University, Egypt)
pp. 642-646

Performance Evaluation of PID, LQR, and SMC for DC-DC Buck Converters Under Multiple Disturbances and Uncertainties
Mohamed Sameh Elkerdany, Mohamed Mamdouh and Amr Sarhan (Military Technical College, Egypt)
pp. 647-652

Wednesday, May 14 11:30 - 1:30

We WorkShop (1) 📇

Workshop Title: "Technology Evolution in Communication Science by Using Optical Fiber Cables (1)".
Invited Speakers:
Omaima Mohamed Abdelhalim Elsayed, Telecom Egypt, Cairo, Egypt.
Ahmed Mostafa Ali Abdelrazek, Telecom Egypt, Cairo, Egypt.
Mostafa Sobhy Omar Mostafa, Telecom Egypt, Cairo, Egypt.
Saly Abdelazeez Ibrahim Hasan, Telecom Egypt, Cairo, Egypt.
Room: Abdelaziz Seif Hall
Chairs: Adel Abdallah (Military Technical College, Egypt), Ahmed Hosni Elghandour (Military Technical College, Egypt), Mohammed Ibrahim Hosni Elsayed (Military Technical College, Egypt)

Wednesday, May 14 2:30 - 4:30

Remote Sensing 📇

Room 2

Chairs: Ahmed S. Mashaly (Military Technical College, Egypt), Wael Murtada (National Authority for Remote Sensing and Space Sciences, Egypt)
Invited Talks

*Invited Talk Title: "Development of Egyptian Intelligent Geoinformatics Systems for Processing of Remotely Sensing Data"

Speaker: Prof. Dr. Ahmed Serwa, Civil Engineering Department, Faculty of Engineering in Mataria- Helwan University-

Deep Learning Semantic Segmentation-Based Scan-to-BIM for Indoor Point Clouds
Mostafa Mahmoud Hanafy Mahmoud and Mahmoud Adham Abdelhameed Arif (Land Surveying and Geo-Informatics, the Hong Kong Polytechnic University, Egypt & Cairo University, Egypt); Yaxin Li (The Hong Kong Polytechnic University, Hong Kong); Wu Chen (Hong Kong Polytechnic University, Hong Kong)
pp. 653-658

A Comparative Study of YOLO Versions for Airplane Detection in Remote Sensing Satellite Images
Rashad Adel Harhash, Tarek Mahmoud and Ibrahim Sh. Sanad (Military Technical College, Egypt); Mohamed E. Hanafy, Dr (Miliatry Tecnical College, Egypt)
pp. 659-664

A Deep Learning-Based Detection of Ground Deformation Using a Single Interferogram
Mahmoud Elhussien Ibrahim Abdallah (The Hong Kong Polytechnic University, Hong Kong & Mansoura University, Egypt); Xiaoli Ding (The Hong Kong Polytechnic University, China); Samaa Tayeb (Mansoura University, Egypt); Songbo Wu (The Hong Kong Polytechnic University, Hong Kong)
pp. 665-670

Optimizing Weekly Temporal Patterns of Barchan Dune Migration Using Multi-Sensor Fusion and Inversion Techniques
Eslam A Saleh (Cairo University, Egypt); Wenbin Xu (Central South University, China); Zhijia Zheng (Fuzhou University, China); Lei Xie (Central South University, China); Tarek Zayed (The Hong Kong Polytechnic University, Hong Kong)
pp. 671-676

Wednesday, May 14 2:30 - 4:30
IEEE AP Egypt Chapter Workshop 🗗

Workshop Title: "Emerging Trends in Microwave Sensors for Biomedical Applications".

Invited Speakers:
Prof. Dalia Elsheakh, Electronics Research Institute, Egypt.
Prof. Angie R. Eldamak, Faculty of Engineering - Ain Sham University, Egypt.
Prof. Anwer S. Abd El-Hameed, Electronics Research Institute, Egypt.
Prof. Sahar Ali Fawzi, Faculty of Engineering - Cairo University, Egypt.
A. Prof. Mohamed Ali Mohamed Roshdy, Faculty of Engineering - Cairo University, Egypt.
Room 3
Chairs: Ahmed Abdelraheem (Military Technical College, Egypt), Mohamed Hagag (Military Technical College, Egypt & Purdue University, USA)

Wednesday, May 14 2:30 - 4:30

AI-Powered Electrical Engineering 📇

Room 1
Chairs: Tarek Mahmoud (Military Technical College, Egypt), Sherin Youssef (AAST, Egypt)

A Novel Approach for Enhancing Audio Modality in Multimodal Deception Detection Environment Using Liquid Neural Networks

Ahmed Tarek Elbattawy and Khaled Badran (Military Technical College, Egypt); Mohamed Elhaddad (University of Victoria, Canada & Military Technical College, Egypt)

pp. 677-682

Designing and Implementing a Smart Parking Management System for Smart Cities

Hesham Ali Sakr, Hs (Elsewedy University Of Technology, Egypt & SUT, Egypt); Mohaned Ehab, Mohamed Ashraf Talaat, Najwa Elsayed Mohamed, Mohamed Tarek Mohamed, Mohamed Ahmed Shoieb, Alyaa A. Hamza and Abdelgwad Elashry (SUT, Egypt)

pp. 683-688

Predicting Software Engineering Trends from Scientific Papers with a Combined Framework of Clustering and Topic Modeling

Marwa Mahmoud (German University in Cairo (GUC), Egypt); Maggie Mashaly (German University in Cairo, Egypt); Mervat Abu-Elkheir (The German University in Cairo & Media Engineering and Technology, Egypt)

pp. 689-694

Machine learning framework for energy consumption optimization using the TabPFNRegressor algorithm

Hager Saleh (Faculty of Computers and Artificial Intelligence Hurghada University, Hurghada, Egypt); Zaher Baali (College of Informatics, Midocean University Comoros, Southeastern Africa); Shaker El-Sappagh (Faculty of Computer Science and Engineering Galala University Suez, Egypt)

pp. 695-699

Wednesday, May 14 2:30 - 4:30

Modern Protection Techniques 📇

Room 4
Chairs: Mohammed Yehia Amer (Military Technical College, Egypt), Mahmoud M Badreldien (MTC, Egypt)
Invited Talks

*Invited Talk Title: "White Paper: Energy Efficiency in Power Distribution"

Speaker: Eng. Mohamed Hesham, Siemens Company, Egypt

Enhancing Power Quality in Renewable-Integrated Grids Using Small Modular Reactors

Raouf Mohamed Ghounimy Elfaramawy, Raf (Nuclear Power Plants Authority, Egypt); Amr Sarhan (Military Technical College, Egypt); Sherif Helmy (Nuclear Power Plants Authority (NPPA), Egypt); Amged El-Wakeel (Nuclear Power Plants Authority, Egypt)

pp. 700-705

A Co-Simulation Approach for Fault Detection in Induction Motor Drive Systems Using Finite Element and Spectral Analysis

Ibrahim M Gaber (Arab Academy for Science, Technology & Maritime Transport, Egypt); Rania Assem Ibrahim

(Co-Author, Egypt); Hamdy Ashour (Arab Academy for Science and Technology (AAST), Egypt); Mohamed M Sedky (Alexandria University, Egypt)
pp. 706-710

Advanced Fault Detection in Power Transmission Systems Using Hybrid DT-MLP model with ROS and ENN techniques

Amir R. Ali (The German University in Cairo (GUC), Egypt & PI of the Applied-Science & Robotics Laboratory for Applied-Mechatronics ARAtronics Laboratory, Egypt); Hossam Kamal (German University in Cairo (GUC), Egypt)
pp. 711-716

Wednesday, May 14 2:30 - 4:30

We WorkShop (2) 📇

Workshop Title: "Technology Evolution in Communication Science by Using Optical Fiber Cables (2)".
Invited Speakers:
Omaima Mohamed Abdelhalim Elsayed, Telecom Egypt, Cairo, Egypt.
Ahmed Mostafa Ali Abdelrazek, Telecom Egypt, Cairo, Egypt.
Mostafa Sobhy Omar Mostafa, Telecom Egypt, Cairo, Egypt.
Saly Abdelazeez Ibrahim Hasan, Telecom Egypt, Cairo, Egypt.
Room: Abdelaziz Seif Hall
Chairs: Adel Abdallah (Military Technical College, Egypt), Ahmed Hosni Elghandour (Military Technical College, Egypt), Mohammed Ibrahim Hosni Elsayed (Military Technical College, Egypt)

Thursday, May 15

Thursday, May 15 9:00 - 11:00

Nano and Microelectronics Special Session 📇

Room 2
Chairs: Ayman Eltager (Military Technical Collage, Egypt), Khaled Ali Shehata (Arab Academy for Science and Technology, Egypt)
Invited Talks

*Invited Talk Title: "The Role of Electrodes in Enhancing the Performance of Electronic Devices: Insights from Perovskite Solar Cells and Glucose Monitoring Sensors"

Speaker: Prof. Sameh O. Abdellatif, British University in Cairo, Egypt

*Invited Talk Title: "Sustainable Microelectronics: From Green Fabs to Self-Powered ICs"

Speaker: Dr Aida Elsabban, Ministry of Communication, Egypt

The Role of Electrodes in Enhancing the Performance of Electronic Devices: Insights from Perovskite Solar Cells and Glucose Monitoring Sensors

Sameh Osama (The British University in Egypt, Egypt)

Sustainable Microelectronics: From Green Fabs to Self-Powered ICs

Aida AF Elsabban (Britich University in Egypt (BUE), Egypt)

Optimized Test Pattern Reduction for Gate-Exhaustive Faults Using MTTG and Quine-McCluskey STC

Mariam Taher and Hossam Moetaz Shousha (Cairo University, Egypt); Ahmed Saeed (Future University in Egypt, Center of Nanoelectronics and Devices, the American, Egypt); Yehea Ismail (American University in Cairo, Egypt)
pp. 717-722

Down scaling Impact on The ION/IOFF Ratio of Nanosheet FET Digital Application

Firas Natheer Agha (University of Mosul, Iraq); Khalid Khalel Mohammed (Ninevah University, Iraq); Hussain Al Abdulqader (University of Nizwa, Oman); Billel Smaani (Centre Universitaire Abdel Hafid Boussouf Mila, Algeria)
pp. 723-726

Thursday, May 15 9:00 - 11:00

Navigation Engineering 📑

Room 3
Chairs: Ashraf Abosekeen (Military Technical College, Egypt), Tamer Habib (National Authority for Remote Sensing and Space Science, Egypt)

Stereo ORB-SLAM3 Underwater Performance Evaluation

Hossam Elkeshky (Ain Shams University, Egypt); Samer Mohamed (AinShams University, Egypt); Mohammed Ibrahim Awad and Hossam Abd El munim (Ain Shams University, Egypt)
pp. 727-732

A Smartphone-Enabled Framework for Vehicle Positioning Using Sensor Fusion and Map-matching Algorithm

Mostafa Mahmoud Hanafy Mahmoud and Mahmoud Adham Abdelhameed Arif (Land Surveying and Geo-Informatics, the Hong Kong Polytechnic University, Egypt & Cairo University, Egypt); Mahmoud Abd El Rahman and Adel Hassan (Cairo University, Egypt)
pp. 733-738

Adaptive VINS-GNSS Fusion with Intelligent Switching and Failure Detection for Robust Autonomous Vehicle Localization

Mahmoud Adham Abdelhameed Arif (Land Surveying and Geo-Informatics, the Hong Kong Polytechnic University, Egypt & Cairo University, Egypt); Wu Chen (Hong Kong Polytechnic University, Hong Kong); Mostafa Mahmoud Hanafy Mahmoud (Land Surveying and Geo-Informatics, the Hong Kong Polytechnic University, Egypt & Cairo University, Egypt); Ahmed Mansour, Yang Yang and Yaxin Li (The Hong Kong Polytechnic University, Hong Kong)
pp. 739-744

Robust and Adaptive Control Strategies for Re-entry Vehicles

Ahmed Rabie Abd ELhamid, Nagy (Ain Shams University, Egypt & Faculty of Engineering, Egypt); Ibrahim Arafa (Military Technical College, Egypt); Hussein A Elsayed and Hadia M. elhennawy (Ain Shams University, Egypt)
pp. 745-750

Enhanced Loosely Coupled INS/GPS Integration Using Non-Holonomic Constraints for ground vehicles

Khalid M Nasr, Sherif Mostafa, Ali Maher and Ahmed M. Kamel (Military Technical College, Egypt)
pp. 751-756

Metaheuristic Optimization for Multi-AGV Path Planning in Search and Rescue Missions

Arwa H. Ghoneim and Ahmed M Elsoda (German University in Cairo, Egypt); Heba A. Abdelmawla (German University in Cairo (GUC), Egypt); Khaled Elbadawy and Linah Tamer (German University in Cairo, Egypt); Lobna Tarek (The German University in Cairo, Egypt); Jessica Magdy (German University in Cairo, Egypt); Omar M. Shehata (Multi-Robot Systems (MRS) Research Group, German University in Cairo, Egypt)

Thursday, May 15 9:00 - 11:00

AI Ethics in Healthcare 📧

Room 1
Chairs: Mohamed Elhaddad (University of Victoria, Canada & Military Technical College, Egypt), Emad Elsamahy (Arab Academy for Science, Technology, and Maritime Transport, Egypt)

Exploring the Accuracy and Performance: A Comparative Analysis of Deep Learning Techniques for ICD Prediction from Clinical Notes

Mostafa M Elbehery (Military Technical Collage, Cairo, Egypt); Mohamed S. Mohamed (Military Technical College, Egypt); Mohamed A. Elshafey (Computer Engineering and Artificial Intelligence, Military Technical College, Cairo, Egypt)
pp. 763-768

Optimized Real-time Mortality Prediction System based on Combining Machine Learning, Explainable AI and Big Data Platforms

Hager Saleh (South Valley University, Egypt); Nora El-Rashidy (Kafrelsheiksh University, Egypt); Shaker El-Sappagh (Galala University, Egypt); Sara Lotfy (South Valley University, Egypt); Elnomery Zanaty (Sohag University, Egypt); Nahla F. Omran (South Valley University, Egypt)
pp. 769-775

An interpretable model for the diagnosis of Alzheimer's disease using deep learning and machine learning

Nourhan Ibrahim, Lamiaa A. Elrefaei and Eman Abdel-Ghaffar (Benha University, Egypt)
pp. 776-783

scExplore: A Comparative Study of Molecular Embeddings for Single-Cell Perturbation Analysis

Ankush H V, Arya Vinayak Raghuram, Ganya Umesh and Adithi S Murthy (PES University, India); Gowri Srinivasa (PES University, India & Center for Pattern Recognition, India)
pp. 784-789

Large language models for automated sleep staging

Akshay Prasad Honnavalli, Hrishi Preetham G, Aaryan Hemant Badyal and Adithya Sharma C A (PES University, India); Gowri Srinivasa (PES University, India & Center for Pattern Recognition, India)
pp. 790-795

Efficient Fault Detection in Photovoltaic Systems Using Machine Learning: A Comparative Analysis of Tree-Based Models

Omar Mohammed Alqaraghuli (UIniversity of Altinbas, Iraq); Abdullahi Abdu Ibrahim (Altinbas University, Turkey)
pp. 796-801

Thursday, May 15 9:00 - 11:00

MTC Workshop 📧

Workshop Title: "Radar Remote Sensing and Radar Imaging Applications".
Invited Speaker:
Assoc. Prof. Ahmed Azoz, Military Technical College, Cairo, Egypt.
Room 4
Chair: Hossameldin Aboubakr Badr Hassan (Military Technical College, Egypt)

Thursday, May 15 9:00 - 11:00

Poster Session 3

Mariam Osama Ahmed, "Fine-tune LLMs for Enhanced Conference Recommendation"
Habiba Sherif Sayed, "AI-Powered Healthcare System for Medical Diagnosis and Treatment Planning"
Abdelrhman Salah Salem, "AI-Driven Energy Optimization Framework for Sustainable Urban Development"
Aalaa Abdelnasser Mahran, "Rehabilitation Lower Limb Exoskeleton and Orthosis: Role in Rehabilitation, Challenge and Design"
Hazem Abdullah Kortam, "UAV Detection, Tracking and Jamming System"
Ahmed Ragab Mogoda, "Intelligent Vehicle Control System: OTA Updates with Real-Time Diagnostics via CAN Bus"
Nouran Ahmed Haggag, "Microwave Imaging for Bone Fracture"
Nour Sherif, "AI-Enhanced EEG-Based Autopilot Activator for Fighter Jets"
Room: Main Hall Entrance
Chairs: Adel Abdallah (Military Technical College, Egypt), Mohamed Aboelazm (MTC, Egypt), Mohamed Ismail Ahmed (Electronics Research Institute, Egypt & Egyptian Chinese University, Egypt), Ahmed Bendary (Military Technical College, Egypt), Mohamed Reda Ismail (MTC, Egypt)

Thursday, May 15 9:00 - 11:00

ICEENG 2026 Panel Meeting 📷

TPC 2026 Members
Room: Abdelaziz Seif Hall

Thursday, May 15 11:30 - 12:30

Keynote Speech 6 📷

Keynote Title: "IEEE Egypt Technical Activities"

Invited Speaker: Prof. Ahmed Madian
Affiliation: Nile University
Room: Abdelaziz Seif Hall
Chair: Mahmoud Abdelrahman Abdalla (Military Technical College, Cairo, Egypt)