



MENACOMM 2026

Hammamet – Tunisia
12-14 May 2026

Conference Program

MENACOMM 2026 | May 12 – 14, 2026, Hammamet – Tunisia

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2026 Middle East & North Africa COMMUNICATIONS Conference

12 – 14 May, 2026, Hammamet - Tunisia

<https://menacomm.org/>



Date	Time	Event	
Day 1 – Tuesday, May 12, 2026	8:00 – 9:00	Registration	
	9:00 – 09:15	Welcome & Opening Ceremony General Chairs: Prof. Tarek Bejaoui & Prof. Rim Moussa Steering Committee Chair: Prof. Jacques Demerjian IEEE Lebanon Section Chair: Prof. Nazih Moubayed Vice-Dean of the Faculty of Sciences of Bizerte : Prof. Habib Fathallah	
	09:15 – 10:15	Keynote Speaker 1: Prof. Khaled B. Letaief (President Emeritus IEEE ComSoc)	
	10:15 – 10:30	Coffee Break	
	10 :30 – 11 :30	Keynote Speaker 2: Prof. Michele Luglio (University of Rome Tor Vergata, Italy)	
	11:45 – 13:15 (On-site/ Virtual)	A1- AI and Medical Imaging for Healthcare A2- Advancing IoT and AI for Smart Environments A3V- Privacy-Preserving AI and Data Quality A4V- AI in Education and Human-Centric Applications A5V- Wireless Networks and Quantum Communications	
		13:15 -14:15	Lunch
		14:15 – 15:15	Keynote Speaker 3: Prof. Imad Elhadj (American University of Beirut, Lebanon)
		15 :15 – 15 :45	Coffee Break
		15:45 – 17:45 (On-site/Virtual)	A6- Advances in Adaptive Networks and Autonomous Systems A7V- AI for Cybersecurity and Network Defense A8V- Telemedicine and AI in Healthcare A9V- Advances in Communications and Networking
Day 2 – Wednesday, May 13, 2026	8 :00 – 9 :00	Registration	
	9 :00 – 10 :00	Keynote Speaker 4: Prof. Abdallah Makhoul (University Marie et Louis Pasteur, France)	
	10:00 – 10:30	Coffee Break	
	10 :30 – 12 :00 (on-site/online)	B1- Next-Gen Networks and Advanced Communication Technologies B2V- Advances in Communications and Antenna Systems B3V- Next-Gen IoT & AI-Powered Smart Apps B4V- IoT Security and Privacy-Preserving Systems Workshop: Sovereign AI: Designing the Future of Trusted Foundation Models	
		12:00 -13:00	Lunch
		13:00 --14:00	Awards Ceremony
		14 :00 – 15 :00	Keynote Speaker 5: Prof. Suat Özdemir (Hacettepe University, Türkiye)
		15:00 – 15:30	Coffee Break
	15 :30 – 17 :30 (on-site/online)	B5- AI-powered Smart Solutions and Apps B6- Cybersecurity and AI-Driven Network Security B7V- Next-Gen AI for Smart Cities & Dynamic Systems B8V- Innovations in Cybersecurity	
		20:30 – 23:30	Banquet
Day 3	From 13:30	Social event	

Full MENACOMM 2026 Conference Program

The live sessions of the conference will be held in Hammamet, Tunisia - Time Zone (GMT/UTC + 01:00 hour)

Day 1 – Tuesday, May 12, 2026

09:00 – 09:30

Welcome & Opening Ceremony

Room: Cesare

Prof. Tarek Bejaoui & Prof. Rim Moussa (General Chairs)

Prof. Jacques Demerjian (Steering Committee Chair)

Prof. Nazih Moubayed (IEEE Lebanon Section Chair)

Prof. Habib Fathallah (Vice-Dean of the Faculty of Sciences of Bizerta)

09:15 - 10:15

Keynote Speaker 1: Prof. Khaled B. Letaief (HKUST, Hong Kong, President Emeritus IEEE ComSoc)

Title: *Transforming Connectivity: AI Innovations for Next-Gen Wireless Networks*

Session Chair: *Prof. Chadi Abou-Rjeily* (Lebanese American University - LAU, Lebanon)

10:30 - 11:30

Keynote Speaker 2: Prof. Michele Luglio (University of Rome Tor Vergata, Italy)

Title: *Innovations in satellite networks for advanced architectures and services*

Session Chair: *Prof. Ahmed Elhajj* (American University of Beirut- AUB, Lebanon)

11:45 – 13:15

Session A1: AI and Medical Imaging for Healthcare

Session Chair: **Prof. Hela Mahersia** (University of Carthage, Tunisia)

Room: Cesare

1571236441 Noise Benchmarking and Denoising Evaluation on the ENID Medical Imaging Dataset

Yosr Haddad (University of Carthage, Tunisia); Hela Mahersia (University of Carthage, Tunisia & National Engineering School of Tunis, Tunisia)

1571245703 Vision Transformer-Based ECG Arrhythmia Classification with Dual-Mode Augmentation for IoT Healthcare Systems

Aymen Abid (CES Lab - ENIS, Sfax, Tunisia); Omar Cheikhrouhou (CES Laboratory, National School of Engineers of Sfax, Tunisia & University of Sfax, Tunisia); Olfa Gaddour (National School of Engineers of Sfax, Tunisia & ENIS/University of Sfax, Tunisia)

1571257164 A Comparative Study of Deep Learning Models for Pancreatic CT Image Denoising
Ranim Bejaoui (University of Carthage, Tunisia); Rim Mahouachi (University of Carthage); Hela Mahersia (University of Carthage, Tunisia & National Engineering School of Tunis, Tunisia)

1571257394 Comparative Evaluation of Classical Filters and Conditional GANs for MRI Image Denoising
Nourhen Yahyaoui, Selma Batti and Habib Fathallah (University of Carthage, Tunisia)

1571257142 Pachychoroid Detection Based on Artificial Intelligence Algorithms
Khedhira Mariam (University of Carthage, Tunisia); Hela Mahersia (University of Carthage, Tunisia & National Engineering School of Tunis, Tunisia); Fadi Kacem (University of Carthage, Tunisia)

1571232255 Automated Knowledge Graph Construction from Unstructured Medical Data
Fatma Safi (Université de Carthage, Tunisia); Fadi Kacem (University of Carthage, Tunisia); Walid Jallouli (Habib Bougatfa Hospital, Tunisia); Habib Fathallah (University of Carthage, Tunisia)

1571233206 Explainable Kidney Stone Detection from CT Scans: Integrating Grad-CAM with YOLO Model
Fatma Safi (Université de Carthage, Tunisia); Fadi Kacem (University of Carthage, Tunisia); Walid Jallouli (Habib Bougatfa Hospital, Tunisia); Habib Fathallah (University of Carthage, Tunisia)

Session A2: Advancing IoT and AI for Smart Environments

Session Chair: *Prof. Jihene Rezgui (University of Montreal & College maisonneuve, Canada)*

Room: Cornélia

1571257033 Energy-Efficient IoT Localization with Uncertainty-Aware EKF and Hybrid Markov-CNN-PCA Models
Maher Jabberi (University of Sousse, Tunisia); Bassem Sellami (UMR Espace-Dev, University of Pe, France); Hakiri Akram (University of Pau & Pays de l'Adour, France); Abderrazak Jemai (INSAT Institute, Tunisia & Researcher at SERCOM/EPT, Tunisia)

1571257305 Real-Time Forest Fire Risk Assessment in Tunisia: Integrating LoRaWAN IoT with Machine Learning and FWI
Rania Maaoui, Olfa Dridi and Habib Fathallah (University of Carthage, Tunisia); Karim Fathallah (Laboratory Idea Lab, Tunisia)

1571258027 Satellite-IoT Access Technologies and Simulation Frameworks in 6G Non-Terrestrial Networks: Limitations and Modeling Challenges
Khaoula Kacem (SUP'COM, Tunisia); Nawel Zangar (ESIEE PARIS, France); Soumaya Hamouda (SupCom, Tunisia)

1571247136 Spatiotemporal Data Acquisition and Validation Pipeline for Groundwater Storage Based on Satellite Gravimetry and Hydrological Models
Eya Dridi (University of Carthage, Tunisia); Dorsaf Omri (University of Tunis El Manar, Tunisia); Tarek Bejaoui and Habib Fathallah (University of Carthage, Tunisia)

1571257205 A Comprehensive Survey of Driver Behavior Classification in Smart Transportation Systems: From Rule-Based Models to AI Agents
Chaima Tayachi and Olfa Dridi (University of Carthage, Tunisia); Mohamed Barkaoui (University Laval, Tunisia); Habib Fathallah (University of Carthage, Tunisia)

Session A3V: Privacy-Preserving AI and Data Quality

Session Chair: **Dr. Marianne Abi Kanaan** (Antonine University, Lebanon)

Room: Colisée

1571254503 Generating Synthetic Tabular Data Using Large and Small Language Models

Uendi Muça (University of Marie et Louis Pasteur, France); Hadi Koubeissy (BMW Group, Germany); Abdallah Makhoul (University of Marie et Louis Pasteur, France & Femto-St, France)

1571256727 Genetic Algorithm-Based Privacy Budget Optimization for Differentially Private Gradient Boosting Decision Trees

Marianne Abi Kanaan (Antonine University, Baabda, Lebanon); Elie Chicha (Holy Spirit University of Kaslik, Lebanon); Jean-François Couchot (University of Franche-Comté, France); Maroun Abi Assaf (USEK, Lebanon)

1571248361 A Retrieval-Augmented Framework for Executable Context-Aware Data Quality Assessment

Hadi Fadlallah and Ibrahim Dhaini (University of Sciences and Arts in Lebanon, Lebanon); Rima Kilany Chamoun (Saint-Joseph University, Lebanon & USJ-ESIB, Lebanon)

1571248363 Agentic AI for Context-Aware and Autonomous Data Quality Assessment

Fatima Mubarak and Hadi Fadlallah (University of Sciences and Arts in Lebanon, Lebanon)

1571260769 AI Agent-Based Sound Dataset Generation and Neural Network Classification

Zahraa Almokaddem and Rami Tawil (Lebanese University, Lebanon)

1571239111 A Hyper-Heuristic Framework for Human-in-the-Loop Combinatorial Optimization

Kassem Danach, Sr (Al Maaref University, Lebanon & Chairperson, Lebanon); Jomana Al Haj Hassan (Management Information Systems, Lebanese International University, Lebanon); Samir Haddad and Jinane Sayah (University of Balamand, Lebanon); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)

Session A4V: AI in Education and Human-Centric Applications

Session Chair: **Dr. Charbel Gemayel** (Antonine University, Lebanon)

Room: Caligula

1571239060 AI-Driven Prediction of Students' Academic Performance in Higher Education

Mohamad Fayed, Ziad Doughan and Soubhi Abou Chahine (Beirut Arab University, Lebanon)

1571242983 Enhanced Stacking Ensemble Using Multi-Level Meta-Learning for Student Course Evaluations Sentiment Analysis

Ramzi Habbal, Ziad Doughan and Soubhi Abou Chahine (Beirut Arab University, Lebanon)

1571256957 Unlocking Student Autonomy: The Indirect Positive Effect of Generative AI Use on Academic Performance via Self-Regulated Learning

Suryateja Jonathan Gandha (Bina Nusantara University, Indonesia); Jeklin Harefa (BINUS University, Indonesia)

1571256404 Fine-Tuning and Agentic Workflows for Lebanese Arabizi Understanding and Generation

Joseph Azar (Université Marie et Louis Pasteur & Femto-ST / DISC, France); Abbass Abdullah, Amir Amine, Mohammad Khalife and Hassan Bazzi (Université Marie et Louis Pasteur, France); Raphaël Couturier (University Bourgogne Franche-Comté, France)

1571235002 LoRA-Efficient BERT for Arabic Aspect-Based Sentiment Analysis

Asma Mohammed Shayea (UOB, Bahrain); Mohab A Mangoud M (University of Bahrain, Bahrain)

Session A5V: Wireless Networks and Quantum Communications

Session Chair: **Dr. Amna Riaz** (*Northumbria University, United Kingdom*)

Room: Hannibal

1571251023 ALIGN: Experimental Ground Characterisation of 976nm and 1550nm Beacon/Data Lasers for CubeSat Optical Inter-Satellite Links

Amna Riaz (Northumbria University, United Kingdom (Great Britain))

1571236081 Reliability Analysis of UAV-Assisted Urban FSO Backhaul Under Joint Weather, Turbulence, and Pointing Errors

Amani Chouikhi (SupCom, Tunisia); Maha Sliti (University of Carthage, higher school of communication of tunis, Tunisia)

1571257403 Design and Performance Analysis of a Quantum-Illumination LiDAR System

Hawraa Slaiman and Sara Abou Chakra (Lebanese University, Lebanon); Hassanein Rabah (Wise Analysis, Ltd, United Kingdom (Great Britain))

1571260897 Perspectives on Routing in LEO/NTN Space Networks: Classical, Agentic, and Quantum

Charbel Mattar (LaRRIS, Lebanese University, Fanar, Lebanon); Jacques Bou Abdo (University of Cincinnati, USA); Abdallah Makhoul (University of Marie et Louis Pasteur, France & Femto-St, France); Benoit Piranda (University Marie et Louis Pasteur, France & FEMTO-ST Institute, France); Jacques Demerjian (Lebanese University, Lebanon)

1571257182 Deep vs. Shallow Neural Networks for Power Control in Full-Duplex D2D Communication

Bachar Chaabani and Oussama Bazzi (Lebanese University, Lebanon)

1571248851 Code IM-Assisted RIS for D2D Communications with Hardware Imperfections and Phase Noise

Widad Belaoura (Université M'hamed Bougara Boumerdès, Algeria); Saud Althunibat (Princess Sumaya University for Technology, Jordan); Mazen Omar Hasna (Qatar University, Qatar); Khalid A. Qaraqe (Hamad Bin Khalifa University & College of Science and Engineering, Qatar)

14:15 - 15:15

Keynote Speaker 3: Prof. Imad Elhadj (American University of Beirut, Lebanon)

Title: *AI For or Against Privacy?*

Session Chair: **Dr. Jad Bassil** (*University Marie and Louis Pasteur, Femto-St Institute, France*)

Room: Cesare

15:45 – 17:45

Session A6: Advances in Adaptive Networks and Autonomous Systems

Session Chair: **Dr. Jad Bassil** (*University Marie and Louis Pasteur, Femto-St Institute, France*)

Room: Cesare

1571247920 Would Learning Help? Adaptive CRC-QC-LDPC Selection for Integrity in 5G-NR V2X

Sarah Al-Shareeda (The Ohio State University, USA & Istanbul Technical University, Turkey); Gülcihan Özdemir (Istanbul Technical University, Turkey); Arouj Fatima (Emerging Energy Contracting Est, Bahrain); Mădălin-Dorin Pop (Politehnica University of Timișoara, Romania); Bander A Jabr and Yasser Bin Salamah (King Saud University, Saudi Arabia); Jacques Demerjian (Lebanese University, Lebanon)

1571246786 Secure Connected k-Coverage in Spatial Wireless Sensor Networks

Habib M Ammari (Texas A&M International University, USA); Dakshanya Maddala (Texas A&M University-Kingsville, USA)

1571256552 Evaluating Multi-Agent Path Finding Algorithms for Modular Robot Reconfiguration

Omar Khalil (University Marie et Louis Pasteur, Femto-St Institute, France); Jad Bassil (University Marie and Louis Pasteur, Femto-St Institute, Cnrs, Montbéliard, France); Perla Tannoury (University of Bourgogne Franche-Comte, France); Benoit Piranda (University Marie et Louis Pasteur, France & FEMTO-ST Institute, France); Abdallah Makhoul (University of Marie et Louis Pasteur, France & Femto-St, France)

1571256555 Self-Reconfiguration of Modular Robotic Systems and Programmable Matter Using Reinforcement Learning

Khodor Ghayad (Antonine University, Lebanon); Jad Bassil (University Marie and Louis Pasteur, Femto-St Institute, Cnrs, Montbéliard, France); Abdallah Makhoul (University of Marie et Louis Pasteur, France & Femto-St, France); Roger Achkar (Antonine University, Lebanon); Jad Nassar (Antonine University & TICKET Lab, Lebanon)

1571259668 Benchmarking ROS2 Nav2 for Autonomous Indoor Navigation in a Simulated Institutional Environment

Jihene Rezgui, Noah Favreau and Ilian Djorf (College Maisonneuve, Canada)

Session A7V: AI for Cybersecurity and Network Defense

Session Chair: **Dr. Amna Eleyan** (Manchester Metropolitan University, United Kingdom)

Room: Cornélia

1571252251 Adversarially Robust Channel Estimation for One-Bit Massive MIMO Using Auxiliary Classifier GAN

Tarek Ali, Mohammed Al-Khalidi, Ali Kashif Bashir and Amna Eleyan (Manchester Metropolitan University, United Kingdom (Great Britain)); Rabab Al-Zaidi (University of Salford, United Kingdom (Great Britain))

1571269292 Adaptive Hyperheuristic Framework for Dynamic Network Defense Optimization

Kassem Danach, Sr (Al Maaref University, Lebanon & Chairperson, Lebanon); Samir Haddad (University of Balamand, Lebanon); Jomana Al Haj Hassan (Management Information Systems, Lebanese International University, Lebanon); Jinane Sayah (University of Balamand, Lebanon); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)

1571236066 A Controller-Centric ML-Driven Security & Knowledge Plane for SDN-NFV Architectures

Zakiya Alfughi (Western University, Canada); Abdelkader Ouda (University of Western Ontario, Canada)

1571242125 An Analytical Framework for Integrating Artificial Intelligence into Cybersecurity Decision-Making

Afia Naeem Alam Din and Wael M El-Medany (University of Bahrain, Bahrain)

1571257438 DDoS Attack Detection in Cloud Systems Using a Hybrid Stacked Ensemble

Nematullah Khan, Raad Alharthi, Fahad Alzahrani and Mourad Benmalek (Al Yamamah University, Saudi Arabia); Abdelouahid Derhab (King Saud University, Saudi Arabia)

1571252253 Adversarial Defense Strategies for 6G PHY: A Comprehensive Survey

Tarek Ali, Mohammed Al-Khalidi, Ali Kashif Bashir and Amna Eleyan (Manchester Metropolitan University, United Kingdom (Great Britain)); Rabab Al-Zaidi (University of Salford, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia)

Session A8V: Telemedicine and AI in Healthcare

Session Chair: **Prof. Hela Mahersia** (*University of Carthage, Tunisia*)

Room: Colisée

1571257414 AI-Driven Recovery Prediction Using Wearable Sensors for Musculoskeletal Injury

Joseph Mouhayar (Ticket Research Lab Antoine University, Baabda, Lebanon); Youssef Keryakos and Youssef Bou Issa (Ticket Research Lab Antoine University, Baabda); Christian Salim (Inria, France)

1571232472 A Supervisor-Coordinated Multi-Agent Architecture with ReAct Reasoning and FHIR Integration, Achieving 41% Diagnostic Time Reduction in Telemedicine Workflows

Muthukumarapandian Chandrasekaran (CitiusTech, USA)

1571256416 Zero-Shot ECG Arrhythmia Classification from Waveform Images: An Experimental Study with Vision-Language Models

Joseph Azar (Université Marie et Louis Pasteur & Femto-ST / DISC, France); Raphaël Couturier (University Bourgogne Franche-Comté, France); Ke Du (China Pharmaceutical University, China); Jiaying Yan (Qingyi (Shanghai) Intelligent Technology Co., Ltd., China)

1571245299 Autism Spectrum Disorder Detection: Privacy-Preserving AI Approaches

Shyamali Das (Silicon University, India); Ali Ahmed (Victoria University of Wellington, New Zealand); Pamela Choudhury (SIT Bhubaneswar, India); Hrudaya Kumar Tripathy (KIIT University, USA); Tarek Gaber (The University of Salford, United Kingdom (Great Britain)); Mahmoud H. Qutqut (Gulf University for Science & Technology, Kuwait & Applied Science Private University, Jordan)

1571256461 AI-Driven Communication-Aware Lightweight Transformer-Neuro-Fuzzy Framework for Robust EEG Monitoring over Wireless Telemedicine Networks

Alaa Daher (Electrical and Computer Engineering, Lebanon); Mohammad Ayache (Beirut Arab University (BAU), Lebanon); Soubhi Abou Chahine (Beirut Arab University, Lebanon)

Session A9V: Advances in Communications and Networking

Session Chair: **Dr. Sara Abou Chakra** (*Lebanese University, Lebanon*)

Room: Caligula

1571236089 Learning-Assisted Proactive Reattachment in Tree-Structured VLC-VANETs

Rim Touhami (SUP'COM, Tunisia); Maha Slihi (University of Carthage, higher school of communication of tunis, Tunisia)

1571257384 Agentic AI in Distributed SDN: Synchronization and Design Framework

Rawan Alsheikh and Etimad Fadel (King Abdulaziz University, Saudi Arabia); Nadine Akkari (Jeddah International, Saudi Arabia)

1571276464 Task-Aware Semantic Communications for 6G Under Finite Blocklength: Joint Reliability, Blocklength, Power and Compute Optimisation

Iakovos Ioannou (Philips University, Cyprus & University of Cyprus and CYENS Centre of Excellence, Cyprus); Ala Khalifeh (German University of Jordan, Jordan); Nagaradjane Prabagarane (Sri Sivasubramaniya Nadar College of Engineering, India); Vitawat Sittakul (King Mongkut's University of Technology North Bangkok, Thailand); Vasos Vassiliou (University of Cyprus & CYENS Center of Excellence, Cyprus)

1571228076 Performance Evaluation of Tomcat Across Oracle Linux Versions in a Legacy Environment

Elisa Benetti (LepidaScpA, Italy); Gianluca Mazzini (LepidaSpA & UniFe, Italy)

1571268828 Cloud-Native, AI-Augmented Fault Correlation and Root Cause Analysis for Multi-Vendor Networks

Sesha Kiran Gonaboyina (IEEE Member, USA); Balu Chavan (IndependentResearcher, USA); Nareshkumar Soundarajan (Concentrix Catalyst, USA)

Day 2 – Wednesday, May 13, 2026

09:00 - 10:00

Keynote Speaker 4: Prof. Abdallah Makhoul (University Marie et Louis Pasteur, France)

Title: *Toward Intelligent Programmable Matter: Distributed Self-Reconfiguration and Embedded AI*

Session Chair: *Prof. Hela Mahersia (University of Carthage, Tunisia)*

Room: Cesare

10:30 – 12:00

Session B1: Next-Gen Networks and Advanced Communication Technologies

Session Chair: *Prof. Chadi Abou-Rjeily (Lebanese American University - LAU, Lebanon)*

Room: Cesare

1571240696 A Novel Probabilistic Relay Selection Protocol for Buffer-Aided Cooperative Networks

Chadi Abou-Rjeily (Lebanese American University (LAU), Lebanon); Naim Aoun (Lebanese American University, Lebanon)

1571239439 Stomata-Inspired Reconfigurable Square Ring Slot Antennas for 5G Applications

Buthaina Al Siyabi (Sultan Qaboos University, Oman & University of Technology and Applied Science, Oman); Hassan Al-Lawati (Sultan Qaboos University, Oman); Mohammed Bait-Suwailam (Communication and Information Research Center, Sultan Qaboos University, Oman & Dept. of ECE, Sultan Qaboos University, Oman); Joseph Jervase (Sultan Qaboos University, United Arab Emirates)

1571257391 Flexible Phase Shifter Based on Liquid Metal Vias for Reconfigurable Antenna Applications

Sana Gharsalli (University of Carthage, Tunisia & Polytechnic School of Tunisia, Tunisia)

1571236908 WIP: AI-Based Dynamic 5G Channel Optimization for TSN over 5G Using MPNN-TD3

Syed Tasnimul Islam (Chemnitz University of Technology, Germany)

1571249510 ELaP: End-To-End Latency Prediction for Edge Computing Applications

Akash Cuntur Shrinivasmurthy (Dortmund University of Applied Sciences and Arts, Germany); Ali Kadhum Idrees and Jaime S Burbano (University of Applied Sciences and Arts Dortmund, Germany); Rolf Schuster (Open Edge Computing Initiative, Germany)

1571236775 Sensor Antennas for Early Warning Systems: Requirements, Challenges and Future Directions

Rula S Alrawashdeh (Mutah University, Jordan)

Session B2V: Advances in Communications and Antenna Systems

Session Chair: **Dr. Sara Abou Chakra** (*Lebanese University, Lebanon*)

Room: Hannibal

1571248589 An Electrical Model for Software Defined Radio Sub-THz Systems

Chady Geagea (Lebanese University, Lebanon); Ali Al-Hadi Tlais (American University of Beirut, Lebanon); Sara Abou Chakra (Lebanese University, Lebanon); Gunes Karabulut Kurt (Ecole Polytechnique de Montreal, Canada)

1571236753 Frequency Diversity 3D Printed DRA for Wireless Applications

Jana Mohammad AlNatour (The University of Jordan, Jordan); Layan T. AbuRayyan (University of Jordan, Jordan); Raneem Farouq Abdelrahim (Khalifa University, United Arab Emirates); Yanal S Faouri (The University of Jordan, Jordan)

1571263447 Secrecy Analysis of Pinching-Antenna Systems

Osamah S. Badarneh (German Jordanian University, Jordan); Hugerles S Silva (University of Brasília, Brazil); Meysam Ghanbari (Hamad Bin Khalifa University, Qatar); Yazan H. Al-Badarneh (The University of Jordan, Jordan); Tamer Khattab and Mazen Omar Hasna (Qatar University, Qatar); Khalid A. Qaraqe (Hamad Bin Khalifa University & College of Science and Engineering, Qatar)

1571236756 3D Printed Microstrip Array Antenna Loaded with Dielectric Resonators for Frequency Agility Applications

Layan T. AbuRayyan (University of Jordan, Jordan); Raneem Farouq Abdelrahim (Khalifa University, United Arab Emirates); Jana Mohammad AlNatour and Yanal S Faouri (The University of Jordan, Jordan)

Session B3V: Next-Gen IoT & AI-Powered Smart Apps

Session Chair: **Prof. Abdelaziz Sahbani** (*University of Carthage, Tunisia*)

Room: Colisée

1571256396 Adaptive First-Person Shooter: Real-Time Game Difficulty Adjustment Based on Player Stress Levels

Joseph Azar (Université Marie et Louis Pasteur & Femto-ST / DISC, France); Georges Chaiban, Nabil Moussa and Bilal Zahraman (Université Marie et Louis Pasteur, France)

1571243785 IoT-Enabled Deep Learning System for Strawberry Cultivation Viability and Disease Detection in Senegal: Ka-Nguessa

Fatoumata Baldé (Université Alioune Diop de Bambey, Senegal); Mamadou Korka Diallo and Alla LO (Université Alioune DIOP de Bambey, Senegal)

1571255911 Design of an IoT-Based Smart Water Quality Monitoring System with Artificial Intelligence

Hala Ben Ali, Elaf Ebdah and Luae' Al-Tarawneh (Princess Sumaya University for Technology, Jordan)

1571250816 A Speech-Aware Edge System for Adaptive Acoustic Masking in IoT Devices

Saeed Serwan Abdulsattar and Mohab A Mangoud M (University of Bahrain, Bahrain); Fayzeh Abdulkareem Jaber (University of Technology Bahrain, Bahrain & Arabian Gulf University, Bahrain)

1571250437 Design and Deployment of a Minimal Federated Learning Prototype for IoT Devices

Sajjad Abdulla and Mohab A Mangoud M (University of Bahrain, Bahrain)

Session B4V: IoT Security and Privacy-Preserving Systems

Session Chair: **Prof. Nadine Abbas** (*Lebanese American University – LAU, Lebanon*)

Room: Caligula

1571235675 BlindGate: A Gateway Architecture for Practical Privacy-Preserving Deep Packet Inspection on Encrypted Traffic

Evan Gunawan (BINUS University, Indonesia); Yohan Muliono (Bina Nusantara University, Indonesia)

1571255859 Real-Time Visual Privacy Preservation in Mobile Mixed Reality

Zaynab Al Haj, Salam A. Tabet, Ayman Kayssi and Imad H Elhajj (American University of Beirut, Lebanon)

1571252594 Secure Coded Caching in Wireless Networks

Batoul Zghaib (Saint Joseph University, Lebanon & ULFG, Lebanon); Yasser Fadlallah (University of Sciences and Arts in Lebanon, Lebanon)

1571256285 Towards Real-Time Service Classification in Tor: A Supervised Machine Learning Approach

Reem Khalife (Lebanese University, Lebanon); Bassem Haidar (ESIEA, France); Carole Bassil (Lebanese University, Lebanon)

1571256701 Federated DDQN for SDN Intrusion Prevention Under Cross-Domain Heterogeneity

Rafi Srayoui (Lebanese University, Lebanon); Bassem Haidar (ESIEA, France); Carole Bassil (Lebanese University, Lebanon)

1571252245 Adversarial Robustness of Lightweight Channel Estimators for Secure 6G Edge Networks

Tarek Ali, Mohammed Al-Khalidi, Ali Kashif Bashir and Amna Eleyan (Manchester Metropolitan University, United Kingdom (Great Britain)); Rabab Al-Zaidi (University of Salford, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia)

Workshop: Sovereign AI - Designing the Future of Trusted Foundation Models

Session Chair: **Prof. Habib Fathallah** (*University of Carthage, Tunisia*)

Room: Cornélia

1571267766 Exploring Vision-Language Models for Weakly Supervised Video Anomaly Detection: Experiments and Analysis

Olfa Saket, Anis Ben Aicha and Habib Fathallah (University of Carthage, Tunisia)

1571266199 Pretrained Biomedical Foundation Models: Comparative Analysis and Practical Applications in Healthcare

Mounira Zouaghi, Fadi Kacem and Habib Fathallah (University of Carthage, Tunisia)

1571266518 Exploring Open-Weight Foundation Models: From Transformers to Multimodal AI

Chaima Tayachi and Olfa Dridi (University of Carthage, Tunisia); Mohamed Barkaoui (University Laval, Tunisia); Habib Fathallah (University of Carthage, Tunisia)

1571266576 Toward Sovereign Foundation Models for the MENA Region: Balancing Efficiency, Cultural Alignment, and Data Sovereignty

Houssein Eddine Lassoued and Habib Fathallah (University of Carthage, Tunisia); Anis Ben Aicha (SUPCOM, Tunisia)

1571266599 A Survey on Foundation Models for Industrial Intelligence: Architectures, Training Paradigms, and Applications

Nourhen Yahyaoui and Habib Fathallah (University of Carthage, Tunisia); Mohamed Barkaoui (University Laval, Tunisia); Bilel Elayeb (RIADI-GDL Research Lab., Tunisia)

1571272011 A Home Energy Management System Using Alternating Operation and Temperature-Controlled AC

Mohsen Nasri (LMON, Tunisia)

14:15 - 15:15

Keynote Speaker 5: Prof. Suat Özdemir (Hacettepe University, Türkiye)

Title: ***Digital Twin-Driven Task Offloading for Next-Generation IoT Networks***

Session Chair: ***Dr. Nadine Akkari*** (Jeddah International, Saudi Arabia)

Room: Cesare

15:30 – 17:30

Session B5: AI-powered Smart Solutions and Apps

Session Chair: ***Prof. Abdelaziz Sahbani*** (Universoty of Carthage, Tunisia)

Room: Cesare

1571234557 Communication and Machine Learning Framework for Just-in-Time Adaptive Interventions Targeting Eating Behavior

Edward Sazonov (The University of Alabama, USA); Delwar Hossain and Siavash Esfandiari Fard (University of Alabama, USA); Md Billal Hossain (The University of Alabama, USA); Megan A McCrory (Boston University, USA); Janine Higgins (Children's Hospital Colorado, USA); Graham Thomas (Brown University, USA)

1571232462 A Simulation Framework for Pre-Deployment Optimization of Digital Twin Architectures in Resource-Constrained Precision Agriculture

Sourour Meddeb and Selma Batti (University of Carthage, Tunisia); Khaled Boussetta (Universite Sorbonne Paris Nord, France); Habib Fathallah (University of Carthage, Tunisia)

1571236620 MD-AGC: A Multi-Descriptor Adaptive Gamma Correction for Enhanced Urban Mapping and Smart City Analysis

Chaima Ben Fraj, Bf (University of Carthage, Tunisia & Artificial Intelligence Data Engineering Applications Laboratory, Tunisia); Dorsaf Omri (University of Tunis El Manar, Tunisia); Tarek Bejaoui (University of Carthage, Tunisia)

1571255134 PSO-Driven Actionable Counterfactual Explanations for Smart Building Energy Management

Özgecan Muyanlı Kopan (Hacettepe University, Turkey); İbrahim Kök (Ankara University, Turkey); Feyza Yildirim Okay (Gazi University, Turkey); Suat Ozdemir (Hacettepe University, Turkey)

1571236764 State of Charge Estimation for Electric Vehicle Batteries Using Temporal Convolutional Networks

Ghada Toumi (University of Carthage, Tunisia); Abdelaziz Sahbani (University of Tunis El Manar, Tunisia & University of Carthage, Tunisia); Hela Mahersia (University of Carthage, Tunisia & National Engineering School of Tunis, Tunisia)

1571256529 Accuracy and Coverage Assessment of Water Polo Positioning System

Florent Cotton (Samovar, Télécom SudParis, Institut Polytechnique de Paris, France & Efrei Research Lab, France); Elizabeth Colin (EFREI Paris, France); Laurie Contevelle (Efrei Paris, France); Christiano Rodrigues (Federal University of Ceará, Brazil & Engineering School of Information and Digital Technologies (EFREI), France); Wegrzyn-Wolska Katarzyna (EFREI PARIS, France)

Session B6: Cybersecurity and AI-Driven Network Security

Session Chair: **Prof. Ahmed M. El-Hajj** (*American University of Beirut, Lebanon*)

Room: Cornélie

1571234950 Integrating Post-Quantum Cryptography and AI-Driven Security in Multi-Tier Network Architectures

Mustafa El Bizri (Beirut Arab University, Lebanon); Ahmed M. El-Hajj (American University of Beirut, Lebanon); Layth Sliman (EFREI- Paris, France); Ali Massoud Haidar (Beirut Arab University, Lebanon)

1571236359 LLM-Based Advanced Persistent Threat Attribution: A Novel Framework for Enhanced Cyber Threat Intelligence

Adel Alshamrani (University of Jeddah, Saudi Arabia)

1571257375 Autonomous Security Framework for AI-Native 6G Networks: Architecture and Threat Taxonomy

Faten Hasni and Nefzi Arij Salha (University of Carthage, Tunisia); Hakiri Akram (University of Pau & Pays de l'Adour, France); Abderrazak Jemai (INSAT Institute, Tunisia & Researcher at SERCOM/EPT, Tunisia)

1571257385 A Formal Framework for Provable Security in AI-Native 6G Networks

Nefzi Arij Salha and Faten Hasni (University of Carthage, Tunisia); Hakiri Akram (University of Pau & Pays de l'Adour, France); Abderrazak Jemai (INSAT Institute, Tunisia & Researcher at SERCOM/EPT, Tunisia)

Session B7V: Next-Gen AI for Smart Cities & Dynamic Systems

Session Chair: **Dr. Kabalan Chaccour** (*Antonine University, Lebanon*)

Room: Colisée

1571245252 Evaluating Temporal Fusion Transformers for Short-Horizon Urban Traffic Forecasting Under Real-World Deployment Constraints

Khang Hoang Nguyen and Dennis Xu (Johns Creek High School, USA)

1571269285 A Hybrid Learning--Optimization Framework for Dynamic Vehicle Routing Using Real-World Postal Delivery Data

Kassem Danach, Sr (Al Maaref University, Lebanon & Chairperson, Lebanon); Samir Haddad (University of Balamand, Lebanon); Jomana Al Haj Hassan (Management Information Systems, Lebanese International University, Lebanon); Jinane Sayah (University of Balamand, Lebanon); Joseph Merhej (Faculty of Sciences II, Lebanon); Chadi Kallab (Lebanese American University, Lebanon)

1571251754 AI-Assisted Emergency Dispatch for Smart Cities: A Multi-Source Data Fusion Approach

Christophe Guyeux (University of Franche-Comté, France)

1571262982 Cross-Layer AI Optimization of Signaling and Media Planes in Cloud-Based Contact Center Architectures

Balakrishnan Devaraj (Cognizant Technology Solutions, USA); Gokul Pandey (IEEE Senior Member, USA); Rajesh Kumar Kallapari and Dharma Chada (USA)

1571267401 Anomaly Detection and Exceedance Forecasting in IoT Sensor Networks: An MLOps Pipeline Approach

Vipin Kataria (Picarro, USA); Nitin Kumar (Marriott International, USA); Vishal Bharadwaj Meruga (Valparaiso University, USA)

Session B8V: Innovations in Cybersecurity

Session Chair: **Dr. Amna Eleyan** (*Manchester Metropolitan University, United Kingdom*)

Room: Caligula

1571230773 Business Continuity and Disaster Recovery: A Public Administration Use Case

Enrica Salbaroli (Lepida SpA, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

1571231240 Leveraging Identity and Access Management to Mitigate Insider Threats

Zlatan Moric (Algebra University, Croatia); Vedran Dakic and Chinecherem Kalu Kalu (Algebra Bernays University, Croatia)

1571234878 MAIR: A Modular AI-Ready Framework for Scalable Incident Response and Autonomous Governance in Next-Decade Cybersecurity

Olufunsho I. Falowo and Jacques Bou Abdo (University of Cincinnati, USA)

1571236768 Comparing and Evaluating the Effectiveness of File Activity-Based Authentication Compared to Multi Factor Authentication

Matthew Austin Vincenzo (Bina Nusantara University, Indonesia); Nathan Jason Lowen (Universitas Bina Nusantara, Indonesia); Adior Gandawidjaja and Aditya Kurniawan (Bina Nusantara University, Indonesia)

1571236769 A Security Architecture for Hybrid PaaS Mitigating Identity, Network, and Application Risks

Afnan Alsaleh, Nesreen Alotaibi and Shahad Alaskar (Al Yamamah University, Saudi Arabia); Kashif Saleem (King Saud University, Saudi Arabia); Mourad Benmalek and Kamel Haouam (Al Yamamah University, Saudi Arabia)

1571252391 Governance Framework for Resilient Critical Infrastructure

Taiwo Peter Akinremi and Jacques Bou Abdo (University of Cincinnati, USA); Jacques Demerjian (Lebanese University, Lebanon)