



2023 International Symposium on
Networks, Computers and Communications

October 23 - 26, 2023, Doha - Qatar

<https://www.isncc-conf.org/>



Full Program

Date	Time	Event	
Day 1 – Monday, Oct 23 2023	8:00 – 9:00	Registration	
	9:00 – 11:00	Tutorial 1: Mobile Edge Computing for Massive IoT (MIoT) Systems By: Dr. Muhammad Asif Khan, Qatar Mobility Innovations Center (QMIC), Qatar Dr. Emna Baccour, Hamad Bin Khalifa University, Qatar Dr. Ridha Hamila, Qatar University, Qatar Dr. Aiman Erbad, Hamad Bin Khalifa University, Qatar	
	11:00 – 11:15	Coffee Break	
	11:15 – 13:00	Tutorial 2: An Overview of Signal Processing for Massive MIMO and Localization with non-ideal transceivers By: Dr. Salama S. Ikki, Lakehead University, Canada Dr. Ayse E. Canbillen, Lakehead University, Canada Deeb Tubail, Lakehead University, Canada	
	11:15 – 13:00 (virtual)	V1- IoT Networks and Mobile Communications	V5- Trust, Privacy and Security II
		V2- Advances in Communications and Networking I	V6- Satellite Communications and Antenna System
V3- QoS provisioning & Communication Systems		V7- Security and AI/ML for IoT & Apps	
V4- Trust, Privacy and Security I		V8- Advances in Vehicular Networking Technologies II	
Day 2 – Tuesday, Oct 24 2023	8:00 – 9:00	Registration	
	9:00 – 10:00	Welcome & Opening Ceremony Dr. Mounir Hamdi , Founding Dean College of Sc. and Engineering HBKU (<i>Honorary General Chair</i>) Mrs. Eman Al-Kuwari , Director of Digital Innovation Department, MCIT Dr. Ali H. Alaboudy , RDI Senior Scientific Expert, QNRF Program Office Dr. Aiman Erbad (General Chair) Dr. Tarek Bejaoui (Steering Committee and Technical Program Chair)	
	10:00 – 11:00	Keynote Speaker 1: Dr. Mohamed Abid (NASA – USA) <i>Title: Mars missions: Past, present, and future</i>	
	11:00 – 11:15	Coffee Break	
	11:15 – 13:00 (onsite)	A1- Artificial Intelligence & Metaverse	A6- Advances in AI and IoT Research & Security
		A2- Data Analytics and Smart Apps	A7- Trust, Privacy and Security III
		A3- AI/ML Techniques for Smart Cities Apps	A8- Communication Systems and Security
		A4- Advances in Communic. and Networking II	A9- Advances in Communic. and Networking III
		A5- Satellite Communication Systems	
	13:00 -14:00	Lunch	
14:00 – 15:00	Keynote Speaker 2: Dr. Slim Alouini (AI Khawarizmi Distinguished Professor – KAUST) <i>Title: Towards Extreme Band Comm. to Super-Connect the Connected and to Connect the Unconnected</i>		
15 :00 – 15 :30	Coffee Break		
15 :30 – 18 :00	Social Event		
Day 3 – Wednesday, Oct 25, 2023	8:00 – 9:00	Registration	
	9:00 – 10:00	Industry Session / Panel Moderator: Dr. Aiman Erbad , (Hamad Bin Khalifa University, Qatar) Mohammed Sabri H. H. Al-Zaidan , Senior Director Active & Core, Ooredoo Javier Hernandez Fernandez , Technical Director, Iberdrola Innovation Middle East Gammer Abbasi , Professor, University of Glasgow Hamid Menouar , Principal R&D and Innovation Lead, Qatar Mobility Innovations Center (QMIC)	
	10:00 – 11:00	Keynote Speaker 3: Dr. Mérouane Debbah (Director 6G Center, Khalifa University – UAE) <i>Title: Large Language Models for Wireless: The Next Revolution</i>	
	11:00 – 11:15	Coffee Break	
	11:15 – 13:00 (onsite)	B1- Signal Processing & Communication Systems	B6- AI/ML Techniques for Healthcare II
		B2- Industry 4.0, Communication Systems and Networks	B7- Data Analytics and System Engineering
		B3- Advances in Vehicular Networking Technologies	B8- Vehicular Networking and Security
		B4- Advances in Communications and Antenna Systems	B9- Image Processing and Networking
B5- AI/ML Techniques for Healthcare I			
13:00 -14:00	Lunch		
14:00 – 15:00	Keynote Speaker 4: Eng. David Fernandez Piñas (European Space Agency) <i>Title: Towards a Seamless Integration of Satellites in Future Path Aware, QoS Enabled, Multiple Access Networking for Multimedia Applications</i>		

	15:00 – 15:30	Coffee Break		
	15:30 – 17:00	Industry/Sponsors Session: Empowering Innovation & Entrepreneur Ecosystem Shah Kamaly and Waddah Hassan (Digital Incubation Center – Ministry of Communications and Information Technology)		
	20:00 – 22:00	Gala Dinner & Awards Ceremony		
Day 4 – Thursday, Oct 26, 2023	8:00 – 9:00	Registration		
	9:00 – 10:00	Keynote Speaker 5: Dr. Shichao Jin (Space Star Technology – China) <i>Title: Space-Ground Converged Intelligent Networking Technology</i>		
	10:00 – 11:00	Keynote Speaker 6: Eng. Giancarlo Varacalli (Italian Space Agency - ASI) <i>Title: Recent trends in space communications towards global connectivity – an ASI perspective</i>		
	11:00 – 11:15	Coffee Break		
	11:15 – 13:00 (virtual)	V9- AI/ML for Healthcare and Apps	V12- AI/ML for Business and Financial Services	
		V10- Cybersecurity and IoT	V13- Advances in Engineering for Smart Cities and Apps	
		V11- AI/ML in Linguistic and Human Behavior		
	13:00 – 13:15	Closing Ceremony		

Full ISNCC 2023 Conference Program

The live sessions of the conference will be held in Doha, Qatar - Time Zone (GMT/UTC+03:00)

Day 1 – Monday, October 23, 2023

09:00 – 11:00

Tutorial 1

Session Chair: **Marwan Dhuheir** (Hamad Bin Khalifa University, Qatar)

Room: Minaretein Auditorium 00.019

Title: **Mobile Edge Computing for Massive IoT (MlOT) Systems**

Dr. Muhammad Asif Khan, Qatar Mobility Innovations Center (QMIC), Qatar

Dr. Emna Baccour, Hamad Bin Khalifa University, Qatar

Prof. Ridha Hamila, Qatar University, Qatar

Prof. Aiman Erbad, Hamad Bin Khalifa University, Qatar

11:15 – 13:00

Tutorial 2

Room: Minaretein Auditorium 00.019

Title: **An Overview of Signal Processing for Massive MIMO and Localization with non-ideal transceivers**

Prof. Salama S. Ikki, Lakehead University, Canada

Dr. Ayse E. Canbilien, Lakehead University, Canada

Deeb Tubail, Lakehead University, Canada

11:15 – 13:00

Session V1- IoT Networks and Mobile Communications

Session Chair: **Dr. Mohammed Abegaz** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 20**

1570935190 Linear Complexity For k-Coverage Sensor Redundancy Determination in IoT

Chenait Manel (University of Sciences and Technology Houari Boumediene (USTHB), Algeria); Chafika Benzaid (University of Oulu, Finland & University of Sciences and Technology Houari Boumediene (USTHB), Algeria); Bahia Zebbane (University of Science and Technology Houari Boumediene (USTHB), Algeria)

1570906673 Performance Analysis of LoRa for Rice Fading Channels

Takoua Mahjoub (SUPCOM, Tunisia); Adel Ben Mnaouer (Canadian University Dubai & Faculty of Engineering, Applied Science and Technology, United Arab Emirates); Hatem Boujemaa (SupCom, Tunisia); Maymouna Ben Said (Ecole Supérieure des Communications, Tunisia)

1570906815 Latest generation technologies for network coverage in infrastructure-less areas

Daouda Ahmat (University of N'Djamena & Virtual University of Chad, Chad)

1570933459 On Temperature-Dependent Small-Signal Behavioral Modelling of GaN HEMT using GWO-PSO and WOA

Saddam Husain, Kashif Khan, Galymzhan Naurzybayev and Mohammad Hashmi (Nazarbayev University, Kazakhstan)

1570895109 (Poster) Routing in Intermittently Powered IoT Networks

Sara Alsodairi, Geoff V Merrett, Alex S Weddell and Nawfal Al Hashimy (University of Southampton, United Kingdom (Great Britain))

Session V2- Advances in Communications and Networking I

Session Chair: **Marwan Dhuhair** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 21**

1570922015 A Nested Genetic Algorithm-based Optimized Topology and Routing Scheme for WSN

Isaac Owusu Ampratwum and Amiya Nayak (University of Ottawa, Canada)

1570906675 Delay Analysis of Routing Protocols for WSN

Rahil Bensaid (National School of Engineers of Gabes & SUP'COM, Tunisia); Adel Ben Mnaouer (Canadian University Dubai & Faculty of Engineering, Applied Science and Technology, United Arab Emirates); Hatem Boujemaa (SupCom, Tunisia)

1570937773 Energy-Efficient Routing Using LSTM-Based Deep Learning for Sink Mobility Prediction to Enhance Lifetime and Stability of Wireless Sensor Networks

Mohammed F Suleiman (Teesside University, United Kingdom (Great Britain)); Usman Adeel (Teesside University & Intel UK, United Kingdom (Great Britain))

1570923748 Resilient Model-Based Mobile Location Estimators Incorporating Measured Target Speed for Maneuver Tracking

Tan-Jan Ho and Bo-Han Huang (Chung-Yuan Christian University, Taiwan)

1570922905 Data collection using NWDAF Network Function in a 5G Core Network with real traffic

Francesco Zampognaro (University of Rome Tor Vergata, Italy); Lorenzo Serranti (NITEL, Italy); Cesare Roseti (University of Rome Tor Vergata, Italy); Mattia Quadrini (RomARS, Italy)

1570906613 A Genetic Algorithm-based Improved Availability Framework for Controller Placement in SDN

Emmanuel Asamoah, Isaac Owusu Ampratwum and Amiya Nayak (University of Ottawa, Canada)

1570905616 Differentially Private All-Pairs Shortest Distances for Low Tree-Width Graphs

Javad B. Ebrahimi (Sharif University of Technology, Iran & IPM Institute for Research in Fundamental Sciences, Iran); Alireza Tofighi Mohammadi and Fatemeh Kermani (Sharif University of Technology, Iran)

Session V3- QoS provisioning & Communication Systems

Session Chair: **Hayla Nahom** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 26**

1570937606 A Multi-agent Multi-armed Bandit Approach for User Pairing in UAV-assisted NOMA-Networks

Boniface Uwizeyimana (Egypt-Japan University of Science and Technology (E-JUST), Egypt); Ahmed Hassan Abd El-Malek (Egypt-Japan University for Science and Technology (E-JUST), Egypt); Osamu Muta (Kyushu University, Japan); Mohamed Abozahhad (Ejust, Egypt); Maha Elsabrouty (Egypt Japan University for Science and Technology, Egypt)

1570924352 New Resource Allocation Schemes in Multi-Cell Environment Based on Non Orthogonal Multiple Access for Beyond 5G Systems

Marie-Rita Hojeij (Holy Spirit University of Kaslik - USEK, Lebanon); Joseph Assad (USEK, Lebanon)

1570902191 A Reasoning System Architecture for Spectrum Decision Making

Udayan Das (Saint Mary's College of California & Illinois Institute of Technology, USA); Vaishali Nagpure and Cynthia Hood (Illinois Institute of Technology, USA)

1570934214 Estimating 5G Cell Utilization by Passive Measurement: A Machine Learning Approach

Dominik Krah and Stefan Farthofer-Oster (Salzburg Research, Austria); Peter Dorfinger (Salzburg Research Forschungsgesellschaft m. b. H., Austria)

1570934725 Generalized Probabilistic Clustering Projection Models for Discrete Data

Sahar Salmanzade Yazdi, Nizar Bouguila and Fatma Najjar (Concordia University, Canada)

1570896375 Spectral Efficiency Performance of OTFS Based Multi-Cell Systems

Amit Kumar Pathak, Venkatesh Khammammetti and Saif Khan Mohammed (Indian Institute of Technology Delhi, India)

1570896857 Optimal MMSE Processing for Limited-Capacity Radio Stripes

Ioannis Chiotis and Aris L. Moustakas (University of Athens, Greece)

Session V4- Trust, Privacy and Security I

Session Chair: **Dr. Abdullatif Albaseer** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 28**

1570905109 A Demonstrable Break of PCBC Mode

Bhaskar Ghosh (Arkansas Tech University, USA); Albert H Carlson (Austin Community College, USA); Indira K Dutta (Arkansas Tech University, USA)

1570906873 Still Computers Networking is Less Secure Than it Should Be, Causes and Solution

Yazan Aref and Abdelkader Ouda (University of Western Ontario, Canada)

1570924162 Bluetooth Just Works: Security and Vulnerability

Mohamed Yanis Sadaoui, Sirine Hamza and Osman Salem (University of Paris Cité, France); Ahmed Mehaoua (University of Paris City, France)

1570906913 Network Vulnerability Assessment Using Critical Nodes Identification

Mohammed Lalou (University of Burgundy, France), Hamamache Kheddouci (Universite Claude Bernard Lyon 1, France)

1570924144 An Efficient Blockchain and Smart Contracts based Approach for Document Verification

D V N. Siva Kumar and Saptarsi Saha (BITS Pilani Hyderabad Campus, India); Gupta Himanshu and Nama Ravi Teja (BITS Pilani, Hyderabad Campus, India); Soumya Kothari (BITS Pilani Hyderabad Campus, India)

1570896836 On DDoS Attacks as an Expression of Digital Protest in the Russo-Ukrainian War 2022

Thomas Hupperich (University of Münster, Germany & European Research Center for Information Systems, Germany)

1570955996 Malware Detection Issues, Future Trends and Challenges: A Survey

Anas AliAhmad (Palestine Technical University, Palestine); Derar Eleyan (Palestine Technical University-Kadoorie, Palestine); Amna Eleyan (MMU, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia); Mohamad Fadli Zolkipli (University Utara Malaysia, Malaysia); Mohammed Al-Khalidi (Manchester Metropolitan University, United Kingdom (Great Britain))

Session V5- Trust, Privacy and Security II

Session Chair: **Dr. Hamada Al-Absi** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 31**

1570934956 A Comparison of Authentication Protocols for Unified Client Applications

Mohammed Ibrahim El-hajj (Twente University, The Netherlands); Florian Hahn and Floris Breggeman (University of Twente, The Netherlands)

1570935213 Secure Electric Vehicle Dynamic Charging based on Smart Contracts

Karima Massmi (LRSI, Canada); Khaled Hamouid (Université Gustave Eiffel, France); Kamel Adi (University of Quebec in Outaouais, Canada)

1570912374 Multimodal cyber-harassment detection

Mohamed El Hadi Haouari and Abdelkader Tounsi (Université Paris Cité, France); Osman Salem (University of Paris Cité, France); Ahmed Mehaoua (University of Paris City, France)

1570871457 Major CyberSecurity Threats in Healthcare During Covid-19 Pandemic

Viet Minh Nguyen and Abdullah Yasin Nur (University of New Orleans, USA)

1570934300 New In-air Signature Datasets

AbdulAzeez R. Alobaidi (REsearch Groups in Intelligent Machines, Tunisia); Thameur Dhieb (University of Sfax, Tunisia); Zeina N. Nuimi (University of Misan, Iraq); Tarek M. Hamdani (University of Sfax, Tunisia); Ali Wali (REGIM-Lab., Tunisia); Adel M. Alimi (REGIM, University of Sfax, National School of Engineers, Tunisia)

1570942527 Effectiveness of Trust-Based Authentication in Vehicular Cloud Computing

Puya Ghazizadeh, Rudy Etzel and Omar S Narine (St. John's University, USA); Konstantinos Georgiou and Thomas Diakogeorgios (USA); Jaden J Usman (St. John's University, USA)

Session V6- Satellite Communications and Antenna System

Session Chair: **Dr. Muhammed Ibrar** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 48**

1570934010 Rapid CNN-Assisted Iterative RIS Element Configuration

Samed Kesir (Bogazici University & TUBITAK Bilgem, Turkey); M. Yaser Yağan (Bogazici University & HISAR Lab., Turkey); Ibrahim Hokelek (TUBITAK BILGEM, Turkey); Ali E. Pusane (Bogazici University, Turkey); Ali Gorcin (Istanbul Technical University, Turkey)

1570933293 Fabry-Perot Cavity Based Decagonal Shape Patch Antenna for Millimeter-Wave Band Applications

Jawad Ahmad (Nazarbayev University & SEDS, Kazakhstan); Mohammad Hashmi and Galymzhan Nauryzbayev (Nazarbayev University, Kazakhstan)

1570939548 Utilizing 1D Convolutional Neural Networks for Enhanced Design and Optimization of Rectangular Patch Antenna Parameters

Chaima Ferchichi and Dorsaf Omri (University of Tunis El Manar, Tunisia); Taoufik Aguil (Laboratoire des Systèmes de Communications, Tunisia)

1570923784 Novel Mathematical Formulation in Time and Space domains of Transient Scattering Problem Applied to a Parabolic Antenna

Auns Khaled (ENIT, Tunisia); Dorsaf Omri (University of Tunis El Manar, Tunisia); Taoufik Aguil (Laboratoire des Systèmes de Communications, Tunisia)

1570897129 Absolute Added Correlative Coding using APDs for LEO-LEO OISLs

Amrita Gill (University of Nottingham Malaysia Campus, Malaysia); Gnanam Gnanagurunathan (The University of Nottingham Malaysia Campus, Malaysia); Nafizah Khan (University of Nottingham Malaysia Campus, Malaysia); Amin Malek Mohammadi (California State University, USA)

1570922939 Architectures for Non-Terrestrial RAN: Integrated Satellite Access and Backhaul

Mattia Quadrini (RomARS, Italy); Cesare Roseti (University of Rome Tor Vergata, Italy)

Session V7- Security and AI/ML for IoT & Apps

Session Chair: **Dr. Khaled Althelaya** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 49**

1570923639 Privacy Protection Smart Agriculture Based on Functional Encryption

Miaomiao Shen (Hainan University, China)

1570924114 Examining Generative Adversarial Network for Smart Home DDoS Traffic Generation

Md Rashed Iqbal Nekvi (Brandon University, Canada); Sajal Saha (University of Western Ontario, Canada); Yaser Al Mtawa (The University of Winnipeg, Canada); Anwar Haque (Western Ontario, Canada)

1570922619 Artificial intelligence for anomaly detection in IoMTs

Mickael Mohammed and Osman Salem (University of Paris Cité, France); Ahmed Mehaoua (University of Paris City, France)

1570897143 IoT-based local setup for Interfacing Resource Constrained Devices: A Survey

Chandra Shekar, RK (Birla Institute of Technology and Science, Pilani, India); Shubhangi Gawali (BITS PILANI GOA CAMPUS, INDIA, India); Lucy Gudino (BITS Pilani, India); Neena Goveas (BITS Pilani K K Birla Goa Campus, India); Yashovardhan Bapat, Shreya Aiyer and Akhil A Binu (BITS Pilani Goa Campus, India)

1570956146 Autonomous Micro-Grids: A Reinforcement Learning-Based Energy Management Model in Smart Cities

Erol Özkan (Hacettepe University); İbrahim Kök (Pamukkale University, Turkey); Suat Ozdemir (Hacettepe University, Turkey)

1570894449 A Representation Learning Approach Incorporating Entity Descriptions and Types

Weibang Li (Southwest Minzu University, China); Ling Li and Lidong Zhu (University of Electronic Science and Technology of China, China)

Session V8- Advances in Vehicular Networking Technologies II

Session Chair: **Dr. Amjad Ali** (Hamad Bin Khalifa University, Qatar)

Room: **Seminar Room 24**

1570942079 Road Traffic Density Estimation For Adaptive Beam Allocation in an ISAC Setup

Wesam Al Amiri (Tennessee Technological University, USA); Terry Guo (Tennessee Tech University, USA); Allen B. MacKenzie (Tennessee Tech, USA)

1570894815 An HLA and OPNET Based Co-Simulation System for Internet of Vehicles

Yantao Liu and Na Qin (Jiaying University, China)

1570921898 Use of MQTT-SN in Sending Distress Signals in Vehicular Communication

Hemant Gupta and Amiya Nayak (University of Ottawa, Canada)

1570923335 Data Protection and Data Recovery Plan for IoT Transportation Domain

Syed Rizvi, Hans Esteban, Anthony Hammill and Mark Ihnat (Pennsylvania State University, USA)

1570930671 Signals of Opportunity for Car Density Estimation with Limited Training Data

Wesam Al Amiri (Tennessee Technological University, USA); Omar Abdelsalam (Tennessee Tech University, USA); James T. Jones (Tennessee Technological University, USA); Terry Guo (Tennessee Tech University, USA); Allen B. MacKenzie (Tennessee Tech, USA)

1570922859 Connectivity Probability Analysis for VANETs with Big Vehicle Shadowing

Kenneth Okello (Pan African University of Science, Technology and Innovation & Jomo Kenyatta University of Agriculture and Technology, Kenya); Elijah Mwangi (University of Nairobi, Kenya); Ahmed Hassan Abd El-Malek (Egypt-Japan University for Science and Technology (E-JUST), Egypt)

Day 2 – Tuesday, October 24, 2023

09:00 – 10:00

Welcome & Opening Ceremony

Room: Minaretein Auditorium 00.019

Prof. Mounir Hamdi, Founding Dean College of Sc. and Engineering HBKU (*Honorary General Chair*)

Mrs. Eman Al-Kuwari, Director of Digital Innovation Department, MCIT

Dr. Ali H. Alaboudy, RDI Senior Scientific Expert, QNRF Program Office

Prof. Aiman Erbad (General Chair)

Prof. Tarek Bejaoui (Steering Committee and Technical Program Chair)

10:00 - 11:00

Keynote Speaker 1: Dr. Mohamed Abid (Mars 2020 Deputy Chief Engineer – NASA, USA)

Title: Mars missions: Past, present, and future

Session Chair: Prof. Aiman Erbad (Hamad Bin Khalifa University, Qatar)

Room: Minaretein Auditorium 00.019

11:15 – 13:00

Session A1- Artificial Intelligence & Metaverse

Session Chair: **Dr. Emna Baccour** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 20

1570942356 Exploration of Document-oriented Stores' Capacities for Managing Community e-Mailing Lists: Elastic Stack as a Case Study

Rim Moussa (LaTICE & ENI-Carthage, Tunisia); Tarek Bejaoui and Riadh Ouechtatti (University of Carthage, Tunisia)

1570935169 AI Generated Content in the Metaverse: Risks and Mitigation Strategies

Lamiaa Basyoni and Junaid Qadir (Qatar University, Qatar)

1570923691 ChatGPT, Let us Chat Sign Language: Experiments, Architectural Elements, Challenges, and Research Directions

Nada Shahin and Leila Ismail (United Arab Emirates University, United Arab Emirates)

1570923455 ChatGPT backend: A comprehensive analysis

Ali Belgacem (University of Bumerdes, Algeria), Abbas Bradai (University of Côte d'Azur, France)

1570935214 Pathway to Prosocial AI-XR Metaverses: A Synergy of Technical and Regulatory Approaches

Aliya Tabassum, Ezieddin Elmahjub and Junaid Qadir (Qatar University, Qatar)

Session A2- Data Analytics and Smart Apps

Session Chair: **Dr. Khaled Althelaya** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 21

1570935316 U-Net Based Disaster Damage Detection Through Semantic Segmentation

Nishat Ara Nipa and Sachin Shetty (Old Dominion University, USA)

1570948039 A Data-Driven Approach to Assessing Digital Transformation Maturity Factors in Government Institutes

Muna Salem Alfadhli (Ministry of Education and Higher Education & Qatar University, Qatar); Somaya Ali Al-maadeed (Qatar University, Qatar)

1570920543 Utilizing Artificial Neural Networks for Predicting Delays and Assessing Contractor Performance in Roadworks Projects

Saraa Kadhim Alasadi (University of Baghdad & University of Bahrain, Bahrain); Oula M. H. Fatla (Gulf University, Bahrain)

1570935271 A Novel Optimal Wireless Thermal Sensor Placement Approach for Large Commercial Buildings

Mahdi Houchati (Iberdrola Innovation Middle East, Qatar); Aymen Omri (Iberdrola Innovation Middle East, Qatar Science & Technology Park, Qatar); Hussam Kanaan (Iberdrola Innovation Middle East, Qatar); Aiman Erbad and Muhammad Ibrar (Hamad Bin Khalifa University, Qatar); Juan M. Corchado (BISITE Research Group University of Salamanca & Air Institute, Spain); Sergio Marquez Sanchez (University of Salamanca, Spain)

1570934983 Data Driven DRL Model For Home-Energy Control

Mariem Fliss (Iberdrola Innovation Middle East, Qatar Science & Technology Park, Qatar); Mahdi Houchati (Iberdrola Innovation Middle East, Qatar); Arantxa Ortiz Marina (Iberrola Innovation Middle East, Qatar); Santiago Bañales Lopez (Iberdrola Innovation Middle East, Qatar)

1570934958 A hybrid approach for food name recognition in restaurant reviews

Ali Haider (Comsats University Islamabad Abbottabad Campus, Pakistan); Sana Saeed (Comsats University Islamabad, Abbottabad & Higher Education KP, Pakistan); Kashif Bilal (Comsats University Islamabad Abbottabad Campus, Pakistan); Aiman Erbad (Hamad Bin Khalifa University, Qatar)

Session A3- AI/ML Techniques for Smart Cities Apps

Session Chair: **Dr. Hamada Al-Absi** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 26

1570934351 Detection of plant diseases in an industrial greenhouse: Development, Validation & Exploitation

Yassine Lakhdari (ESIEE Paris, France); Enric Soldevila (Collège de Maisonneuve, Canada); Jihene Rezgui (College Maisonneuve, Canada); Eric Renault (LIGM, Université Gustave Eiffel, CNRS, ESIEE Paris, France)

1570933794 Adaptive Ratio-Based-Threshold Gradient Sparsification Scheme for Federated Learning

Jeong Min Kong and Elvino Silveira Sousa (University of Toronto, Canada)

1570921045 Link analysis and Shortest Path Algorithm for Money Laundry Detection

Mansoor Al-Thani and Dena Al-Thani (Hamad Bin Khalifa University, Qatar)

1570941467 Vending Machine Product Demand Prediction using Machine Learning Algorithms

Umair Mehmood (Broderick Group Limited & Manchester Metropolitan University, United Kingdom (Great Britain)); Khaled M. Rabie and Ali Kashif Bashir (Manchester Metropolitan University, United Kingdom (Great Britain)); Simon Davies and John Broderick (Broderick Group Ltd, United Kingdom (Great Britain))

1570930579 SmartyBin: A Tangible AI-based Waste Classification Prototype

Sarah Al-Shareeda (Istanbul Technical University, Turkey); Hamza Jaafar Hasan and Ali Abdulhadi Alkhayyat (University of Bahrain, Bahrain)

1570926540 Arabic Sentiment Analysis of Food Delivery Services Reviews

Dheya Mustafa (Hashemite University, Jordan); Safaa M. Khabour (Yarmouk University, Jordan); Ahmed Shatnawi (Jordan University of Science & Technology, Jordan); Eyad Taqieddin (Jordan University of Science and Technology, Jordan)

Session A4- Advances in Communications and Networking II

Session Chair: **Hayla Nahom** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 28

1570896086 ICST chaotic mapping for anti-prediction frequency hopping sequence generation

He Yutong, Lidong Zhu and Cheng Sixi (University of Electronic Science and Technology of China, China)

1570922473 THz vs. FSO: An Outage Probability and Channel Capacity Performance Comparison Study

Mohammad Taghi Dabiri, Mazen Omar Hasna and Tamer Khattab (Qatar University, Qatar)

1570923760 NOMA BER and BLER Performance Evaluation Under the Received (E_b/N_0)

Hamad Mohamad Ali Yahya (University of Manchester, United Kingdom (Great Britain)); Emad Alsusa (Manchester University, United Kingdom (Great Britain)); Arafat Al-Dweik (Khalifa University, United Arab Emirates)

1570933514 Joint Backhaul Pairing and Resource Allocation of Moving Small Cells Using NOMA

Myra Khalid (National University of Science and Technology, Pakistan); Aamina Akbar (Institute of Space Technology (IST), Islamabad & National University of Science and Technology, (NUST), Pakistan); Hassaan Khaliq Qureshi (National University of Sciences and Technology, Pakistan); Sobia Jangsher (Tyndall National Institute, Ireland)

1570887207 Network Coding to Reduce Congestion and Improve Memory Buffer in Smart Switch

Souryendu Das and Stavros Kalafatis (Texas A&M University, USA)

1570935259 LSTM-Based Algorithm For Cooperative Communication in Impulse Noise Impaired PLC Channel

Fatma Rouissi (Ecole Supérieure des Communications de Tunis, University of Carthage, Tunisia); Wided BelHadj Sghaier (SUP'COM, Tunisia); Fethi Tlili (Ecole Supérieure de Communications de Tunis, Tunisia); HÉla Gassara (Ecole Supérieure des Communications de Tunis, Tunisia)

1570922837 Optimization of Behavioral Model of VO2 Switches using Slime Mould Algorithm

Saddam Husain, Miras Akhmetov, Damir Kanymkulov, Galymzhan Nauryzbayev and Mohammad Hashmi (Nazarbayev University, Kazakhstan)

Session A5- Satellite Communication Systems

Session Chair: **Dr. Mohammed Abegaz** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 31

1570922907 Implementation and testing of MP-TCP ATSSS in a 5G multi-access configuration

Francesco Zampognaro (University of Rome Tor Vergata, Italy); Domenico Verde (University of Rome Tor Vergata - Dip. Ing. Elettronica, Italy); Mattia Quadrini (RomARS, Italy); Michele Luglio (University of Rome Tor Vergata - Dip. Ing. Elettronica, Italy); Cesare Roseti (University of Rome Tor Vergata, Italy)

1570896726 High-Throughput Satellite Resource Allocation Strategy Based on OFDM

Xintong Li, Lidong Zhu, Ke Chu and Wenjun Shi (University of Electronic Science and Technology of China, China)

1570918817 Acquisition of satellite telemetry using a low-cost FPGA board

Elhabib Bensikaddour, Boualem Nasri and Abdelhak Benikhlef (Satellite Development Center, Algeria)

1570922583 Comparative approach in the gain study for two popular shapes of S-band microstrip patch antenna for CubeSats

Amine Bab, Saïah Bekkar-Djelloul-Saïah and Djamel Eddine Baba Hamed (Satellites Development Center, Algeria); Boualem Nasri and Abdelhak Benikhlef (Satellite Development Center, Algeria)

1570935437 A DOA Estimation Method with High Resolution in the Presence of Satellite Array Error

Wenjun Shi, Lidong Zhu and Yimai Shi (University of Electronic Science and Technology of China, China)

1570966720 Leveraging Unsupervised Machine Learning for New Traffic Types Classification in Hybrid Satellite Terrestrial Network

Nawel Zangar (ESIEE PARIS, France); Saloua Hendaoui (Sup'com, Tunisia)

Session A6- Advances in AI and IoT Research & Security

Session Chair: **Dr. Abdullatif Albaseer** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 48

1570943481 Leveraging blockchain for a robust and scalable device identification in LoRaWAN

Lounès Meddahi (ENS Rennes, France); Ahmed Meddahi and Patrick Sondi (IMT Nord Europe, France); Fen Zhou (University of Avignon, France)

1570923327 Context-Aware Security in the Internet of Things: What We Know and Where We Are Going

Asma Ibrahim Alotaibi and Alma Oracevic (University of Bristol, United Kingdom (Great Britain))

1570896911 ERITA: Ensuring the Reliability of Internet of Things-based Applications

Anestis Papakotoulas (National and Kapodistrian University of Athens, Greece); Anastasios Terzidis (Hellenic Open University, Greece); Stathes Hadjiefthymiades (National and Kapodistrian University of Athens, Greece)

1570906919 Anomaly Based Intrusion Detection System: A Deep Learning Approach

Sourou Tossou, Miftahul Qorabil and Thabet Kacem (University of the District of Columbia, USA)

1570906785 Inception based Deep Learning: Biometric Identification using Electroencephalography (EEG)

Jan Herbst, Jan Petershans, Matthias Rüb and Christoph Lipps (German Research Center for Artificial Intelligence, Germany); Ann-Kathrin Beck (University of Kaiserslautern, Germany); Joana C. Carmo (Universidade de Lisboa, Portugal); Thomas Lachmann (University of Kaiserslautern, Germany); Hans Dieter Schotten (Deutsches Forschungszentrum für Künstliche Intelligenz GmbH, Germany)

1570935283 Cross-Platform Compatibility and Power Optimization for the SAWBRID System

Ahmad Salman and Hsuan-Yun Chang (James Madison University, USA)

1570896923 New Heuristics method for Malicious URLs Detection Using Machine Learning

Jawad Khalife (Community College of Qatar & Lebanese University, Qatar); Fatima Fatima Tariq Hussain M Nassar and Maryam M KH Al Marri (Community College of Qatar, Qatar)

Session A7- Trust, Privacy and Security III

Session Chair: **Muhammet Hevesli** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 49

1570896925 Simple Heuristics For Fast DDoS Detection

Jawad Khalife (Community College of Qatar & Lebanese University, Qatar); Almaha M R Albuainain and Eman H S Al-Ejji (Community College of Qatar, Qatar)

1570935250 Multimedia fingerprinting codes resistant to linear attacks and adversarial noise

Grigory Kabatiansky (Skolkovo Institute of Science and Technology, Russia); Marcel Fernandez (Universitat Politecnica de Catalunya, Spain); Ying Miao (University of Tsukuba, Japan); Ibrahim Kamel (University of Sharjah & Concordia University, United Arab Emirates); Tamer Rabie (University of Sharjah, United Arab Emirates)

1570923610 The Closure of The Entropy Region is Not Closed Under Polymatroid Duality for Four Discrete Random Variables

Jiahong Wu, Nan Liu and Wei Kang (Southeast University, China)

1570923698 A Novel Integrity Protocol Based on Physical Unclonable Functions

Abdulaziz Al-Meer and Saif Al-Kuwari (Hamad Bin Khalifa University, Qatar)

1570959125 Detecting Conventional and Adversarial Attacks Using Deep Learning Techniques: A Systematic Review

Tarek Ali (Manchester Metropolitan University, United Kingdom (Great Britain)); Amna Eleyan (MMU, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia)

Session A8- Communication Systems and Security

Session Chair: **Dr. Amjad Ali** (Hamad Bin Khalifa University, Qatar)

Room: Seminar Room 24

1570906439 Digital forensic analysis of AGPTEK smartwatch application on Android OS

Claire Rightley and Umit Karabiyik (Purdue University, USA)

1570923536 OpenPLC and lib61850 Smart Grid Testbed: Performance Evaluation and Analysis of GOOSE Communication

Ahmed Elmasry and Abdullatif Albaseer (Hamad Bin Khalifa University, Qatar); Mohamed M. Abdallah (Hamad Bin Khalifa University (HBKU), Qatar)

1570923573 Mitigating IEC-60870-5-104 Vulnerabilities: Anomaly Detection in Smart Grid based on LSTM Autoencoder

Sajath Ponpuras Sathar, Saif Al-Kuwari, Abdullatif Albaseer and Marwa Qaraq (Hamad Bin Khalifa University, Qatar); Mohamed M. Abdallah (Hamad Bin Khalifa University (HBKU), Qatar)

1570922611 Jamming Detection in Power Line Communications Leveraging Deep Learning Techniques

Muhammad Irfan (Hamad Bin Khalifa University Doha Qatar, Qatar); Aymen Omri (Iberdrola Innovation Middle East, Qatar Science & Technology Park, Qatar); Javier Hernandez Fernandez (Iberdrola, Spain); Savio Sciancalepore (Eindhoven University of Technology (TU/e), The Netherlands); Gabriele Oligeri (HBKU - CSE - ICT Division, Qatar)

1570933271 A Novel Intrusion Detection Scheme using Variational Autoencoders

Abia Amin, Ayalvadi Ganesh and Robert J Piechocki (University of Bristol, United Kingdom (Great Britain))

1570917089 Secure and Successful Transmission Probability Analysis for PLC Networks

Aymen Omri (Iberdrola Innovation Middle East, Qatar Science & Technology Park, Qatar); Javier Hernandez Fernandez (Iberdrola, Spain); Roberto Di Pietro (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)

1570906850 No Filters: A Deep Dive into Photo Sharing Apps on Android and iOS

Mohammad Meraj Mirza (Purdue University, USA & Taif University, Saudi Arabia); Shinelle Hutchinson, Rebecca A Gee and Umit Karabiyik (Purdue University, USA)

Session A9- Advances in Communications and Networking III

Session Chair: **Dr. Muhammed Ibrar** (Hamad Bin Khalifa University, Qatar)

Room: Seminar Room 25

1570923336 UAV-assisted Mesh Network for Emergency Communication in Disaster Areas

Fatima Zahra Rabahi (L2TI Laboratory, France & Smart Structures Laboratory (SSL), France); Saadi Boudjit (University Sorbonne Paris Nord, France); Leila Benarous (University of Amar Telidji, Laghouat, Algeria)

1570935353 Underwater Localization: a Pragmatic Approach

Anisur Rahman (East West University, Bangladesh)

1570935342 Performance study in HetNets Using Dual connectivity and Deep Reinforcement Learning

Arwa Amaira, Hend Koubaa, Faouzi Zarai (University of Sousse, Tunisia)

1570906933 Internet Evolution with IPswen: Towards the Next Generation TCP/IPv4 Internet Architecture

Bing Swen Sun (Peking University, China)

1570923813 Slicenet: a Simple and Scalable Flow-Level Simulator for Network Slice Provisioning and Management

Viswanath Kumar Skand Priya (Esme Research Lab, France); Abdulhalim Dandoush (University of Doha for Science and Technology (UDST), Qatar & ESME & L2TI Sorbonne University Paris Nord, France); Gladys Diaz (Université Sorbonne Paris Nord, France & Laboratoire L2TI, France)

1570923780 Location Estimation of Moving Targets by Passive Sonobuoy and Recurrent Deep Neural Network

Ghazal Najafi (Yadegar-e-Imam Islamic Azad University, Iran)

14:00 - 15:00

Keynote Speaker 2: Prof. Slim Alouini (King Abdullah University of Science and Technology -KAUST- KSA)

Title: Towards Extreme Band Communications to Super-Connect the Connected and to Connect the Unconnected

Session Chair: Prof. Mohamed Abdallah (Hamad Bin Khalifa University, Qatar)

Room: Minaretein Auditorium 00.019

Day 3 – Wednesday, October 25, 2023

09:00 – 10:00

Industry Session

Panel Moderator: **Prof. Aiman Erbad** (Hamad Bin Khalifa University, Qatar)

Room: Minaretein Auditorium 00.019

Hamid Menouar, Principal R&D and Innovation Lead, Qatar Mobility Innovations Center (QMIC)

Mohammed Sabri H. H. Al-Zaidan, Senior Director Active & Core, Ooredoo

Javier Hernandez Fernandez, Technical Director, Iberdrola Innovation Middle East

Qammer Abbasi, Professor, University of Glasgow

10:00 - 11:00

Keynote Speaker 3: Prof. Mérouane Debbah (Director 6G Center, Khalifa University – UAE)

Title: Large Language Models for Wireless: The Next Revolution

Session Chair: Prof. Aiman Erbad, (Hamad Bin Khalifa University, Qatar)

Room: Minaretein Auditorium 00.019

11:15 – 13:00

Session B1- Signal Processing & Communication Systems

Session Chair: **Dr. Mohammed Ibrar** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 20

1570935170 Small-Signal Modeling of GaN-on-Diamond HEMT Using ANFIS Method
Saddam Husain, Bagylan Kadirbay and Mohammad Hashmi (Nazarbayev University, Kazakhstan)

1570923791 Face Anti-Spoofing Detection using Structure-Texture Decomposition
Omar Elharrouss, Somaya Ali Al-maadeed, Dareen Douglas, Asmae Aslam and Nada Ben Hassen (Qatar University, Qatar)

1570935215 Coded Caching in Request-robust D2D Communication Networks
Wuqu Wang, Nan Liu and Wei Kang (Southeast University, China)

1570937798 Resource Allocation in Large Intelligent Surfaces/Antennas Using Genetic Algorithm Approach
Aizhan Ayapbergenova (Nazarbayev University, Kazakhstan); Mahyar Nemati (Deakin University, Australia); Behrouz Maham (Nazarbayev University, Kazakhstan)

1570940370 Design of OVTDM Toward Enhanced Physical Layer Security
Chongda Huang, Kaiyuan Huang, Xiaoyuan Li and Yue Xiao (University of Electronic Science and Technology of China, China)

1570934278 Automatic First Arrival Picking for Seismic Data using Kalman Filter

Muhammad Esmat Othman, Bo Liu and Ali A. Al-Shaikhi (King Fahd University of Petroleum and Minerals, Saudi Arabia); Mohamed Mohandes (King Fahd University of Petroleum & Minerals, Saudi Arabia); Faramarz Fekri (Georgia Institute of Technology, USA); Sherif Mahmoud (King Fahd University of Petroleum and Minerals, Saudi Arabia)

1570917133 Piezoelectric Beam Path Modulation for Visible Light Communication

Matthias Rüb, Jan Herbst and Christoph Lipps (German Research Center for Artificial Intelligence, Germany); Hans D. Schotten (University of Kaiserslautern, Germany)

Session B2- Industry 4.0, Communication Systems and Networks

Session Chair: **Dr. Abdullatif Albaseer** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 21

1570937506 Transmission Power Control for Interference Reduction in Cellular D2D Networks

Mehrdad Sadehvand, Neda Moghim and Behrouz Shahgholi Ghahfarokhi (University of Isfahan, Iran); Sachin Shetty (Old Dominion University, USA)

1570923623 Importance of Realistic Considerations of Time Synchronization for TAS in TSN Networks

Avirop Ghosh and Thomas Kunz (Carleton University, Canada); Saleh Yousefi (Urmia University, Iran)

1570934601 A Study of a Networked Control System under Time Delay

Hana Mejdi (National Engineers School of Tunis, Tunisia); Sami ELmadssia (University of Tunis El Manar, Tunisia & ENIT Engineers National School of Tunis, Tunisia); Tahar Ezzedine (Enit, Tunisia)

1570935266 DI-ESN: Dual Input-Echo State Network for time series forecasting

Chafika Ouni, ouni and Emna Benmohamed (University of Sfax, Tunisia); Hela Ltifi (REGIM - University of Sfax - Tunisia, Tunisia)

1570934218 Latency and Cost-Aware Deployment of Dynamic Service Function Chains in 5G Networks

Amrin Karim, Jannatul Ema, Tasnia Yasmin and Palash Roy (Green University of Bangladesh, Bangladesh); Md. Abdur Razzaque (University of Dhaka & Bangladesh, Bangladesh)

1570896207 An Interference Null Widening Algorithm Based on U-V Domain Expansion of Steering Vector

Yimai Shi, Lidong Zhu, Ean He and Wenjun Shi (University of Electronic Science and Technology of China, China)

1570934593 Influence of Interference and Sampling Period in the Performance of Networked Control Systems

Hana Mejdi (National Engineers School of Tunis, Tunisia); Sami ELmadssia (University of Tunis El Manar, Tunisia & ENIT Engineers National School of Tunis, Tunisia); Tahar Ezzedine (Enit, Tunisia)

Session B3- Advances in Vehicular Networking Technologies

Session Chair: **Dr. Mohammed Abegaz** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 26

1570920218 LRIMa city: a Fog-Computing-Based Smart City with Integrated Self-Driving Cars

Jihene Rezgui (College Maisonneuve, Canada); Enric Soldevila (Collège de Maisonneuve, Canada); Abderrazak Mokraoui (Collège de Maisonneuve (LRIMa), Canada)

1570924112 Smart System for a Self-Driving Scooter Prototype

Somaya Ali Al-maadeed and Naveed Nawaz (Qatar University, Qatar); Mohamed zied Chaari (Qatar University & Qatar, Qatar)

1570929260 Contactless Privacy-Preserving Head Movement Recognition Using Deep Learning for Driver Fatigue Detection

Hira Hameed (University of Glasgow, United Kingdom (Great Britain)); Lubna Lubna (UET, Pakistan); Muhammad Usman (Glasgow Caledonian University, United Kingdom (Great Britain)); Hasan Abbas and Ahsen Tahir (University of Glasgow, United Kingdom (Great Britain)); Kamran Arshad (Ajman University, United Arab Emirates); Khaled Assaleh (American University of Sharjah, United Arab Emirates); Ahmed Alkhayyat (The Islamic University, Malaysia); Muhammad Ali Imran and Qammer H Abbasi (University of Glasgow, United Kingdom (Great Britain))

1570923370 Predictive Analysis of Jordan Road Accidents Severity Using Machine Learning

Dheya Mustafa (Hashemite University, Jordan); Layan Sawaged (The Hashemite University, Jordan); Safaa M. Khabour (Yarmouk University, Jordan)

1570935145 Achieving Quality of Service and Traffic Equilibrium in Software-Defined IoT Networks

Samra Zafar (Dalian University of Technology, China); Muhammad Hanan Abdul Ibrar and Aiman Erbad (Hamad Bin Khalifa University, Qatar); Bakhtawar Zafar (Dalian University of Technology Dalian, China); Xiaopeng Hu (Dalian University of Technology, China)

1570923676 Secure Automated Delivery of Critical Goods with RFID-based Tracking and Authentication

Chaza Araji, Hala Aburajouh, Maryam Al Hail and Elias Yaacoub (Qatar University, Qatar)

Session B4- Advances in Communications and Antenna Systems

Session Chair: **Dr. Emna Baccour** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 28

1570905683 Powering HTC thermometers and LED lamps with microwave energy

Mohamed zied Chaari (Qatar University & Qatar, Qatar); Mohamed Abdelfatah (QSC, Qatar); Gilroy Philbert Pereira (Qatar Scientific Club, Qatar); Rabab Sedrati and Mouad El moudden (Sigl Lab Ensa University of Abdelmalek Essaadi, Morocco); Otman Aghzout (Abdelmalek Essaadi, Morocco)

1570940009 Study of an improved rectenna for RF energy harvesting in the ISM band for energy-autonomous IoT healthcare devices

Yosra Bouchoucha (Ecole Nationale d'Ingénieurs de Tunis, Tunisia); Dorsaf Omri (University of Tunis El Manar, Tunisia); Taoufik Aguilu (ENIT, Tunisia)

1570906838 Multi-Band Electromagnetic Metasurface Absorber Design using Concentric Split-Ring Resonators

Haitham Al-Ajmi and Mohammed Bait-Suwailam (Sultan Qaboos University, Oman)

1570934814 Frequency Domain UWB Receiver instead of Low Complexity Rake Receiver

Tufik M. Buzid (Algabel Algharbi University, Tripoli, Libya); Hisham Sager (Colorado School of Mines, USA); Abdeljawad E. Ramadan (School of Applied Sciences and Engineering Libyan Academy, Libya)

1570921951 Topology of 32x32 Butler Matrix

Mehri Borhani Kakhki (Huawei Technologies Canada Co., Canada); Ahmed Shehata Abdellatif and Hari Krishna Pothula (Huawei Technologies Canada, Canada); David Wessel (Huawei, Canada)

1570923680 Highly efficient Pure Sine Wave inverter Using Microcontroller for Photovoltaic Applications

Ahmed Samir Badawi and Hassan Ali (UDST, Qatar); Mario I Elzein (University of Doha for Science and Technology, Qatar); Alhareth Mohammed Zyoud (Birzeit University, Palestine); Ammar Abu-Hudrouss (Islamic University-Gaza, Palestine)

1570895416 Microstrip Patch Rectenna for Electromagnetic Wireless Power Transfer at 2.45 GHz

Mohamed zied Chaari (Qatar University & Qatar, Qatar); Oleg Serov (Institute of Nanoengineering in Electronics Spintronics and Photonics, Russia)

Session B5- AI/ML Techniques for Healthcare I

Session Chair: **Dr. Khaled Althelaya** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 31

1570922936 Dynamic and Flexible Access Control for IoT-enabled Smart Healthcare

Khaled Hamouid (Université Gustave Eiffel, France); Mohamed Mohammedi (University of Bejaia, Algeria)

1570933021 VisualAid+: Assistive System for Visually Impaired with TinyML Enhanced Object Detection and Scene Narration

Mahdi Alkaeed, Jayakanth Kunhoth, Adeel Ehsan and Junaid Qadir (Qatar University, Qatar)

1570935264 HealthGlasses project: WBAN based communication for health monitoring through smart glasses

Hend Fourati (ESPRIT, Tunisia); Leila Azouz Saidane (ENSI, University of Manouba, Tunisia)

1570935272 Real-time Translation of American Sign Language into Text Using Machine Learning

Rajaa Alqudah, Aya Abugharbieh, Malak Khasawneh and Rasha Harahsheh (Princess Sumaya University for Technology, Amman, Jordan)

1570935373 Sentiment Analysis With Lipschitz Recurrent Neural Networks

Mahmudul Hasan and Sachin Shetty (Old Dominion University, USA)

Session B6- AI/ML Techniques for Healthcare II

Session Chair: **Dr. Hamada Al-Absi** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 48

1570949393 ECG Classification based on Federated Unlearning

Khaoula El Bedoui (LIMTIC, Tunisia)

1570924130 Intelligent Brain Tumor Detector

Somaya Ali Al-maadeed, Omar El Harrouss, Mohammed Alhato, Ali Elmancy and Mostafa Abdelhamid (Qatar University, Qatar)

1570947535 Asthma Assessment Device for Pediatric Patients: A Proof of Concept

Muneera Al-Ghafran, Fatemeh Ahmadizadeh, Asma Al-Naimi, Khalid Abualsaud and Elias Yaacoub (Qatar University, Qatar)

1570935155 Enhancing Global Model Accuracy: Federated Learning for Imbalanced Medical Image Datasets

Khalid Mahmoud Mohammad Dolaat, Muhammad Hanan Abdul Ibrar and Aiman Erbad (Hamad Bin Khalifa University, Qatar)

1570919439 Detecting Human Gait Phases and Conditions with Deep Learning

Sarah Al-Shareeda (Istanbul Technical University, Turkey); Jaafar Al-Jadahsa (University of Bahrain, Bahrain)

Session B7- Data Analytics and System Engineering

Session Chair: **Muhammet Hevesli** (Hamad Bin Khalifa University, Qatar)

Room: Classroom 49

1570956000 Social Engineering in Social Network: A Systematic Literature Review

Ali Adnan Abubaker (Palestine Technical University, Palestine); Derar Eleyan (Palestine Technical University-Kadoorie, Palestine); Amna Eleyan (MMU, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia); Norliza Katuk (Universiti Utara Malaysia, Malaysia); Mohammed Al-Khalidi (Manchester Metropolitan University, United Kingdom (Great Britain))

1570923525 An Improved Distributed Computing Time-Series Short-term Load Forecasting Pipeline for MV Transmission Planning

Hussam Kanaan, Mahdi Houchati and Santiago Bañales Lopez (Iberdrola Innovation Middle East, Qatar); Maria Sainz-Ezkerra Galarraga, Javier Ontañon Ruiz and Miguel Rodriguez Asensio (Iberdrola Global Analytics Group, Bilbao, Spain)

1570905799 Programmer performance prediction with cognitive tests: A granular approach

Ayman Aboulmagd Farghaly (Nile University, Egypt); Passent Elkafrawy (ITCS, Nile University & Menofia University Faculty of Science, Egypt)

1570923651 Measuring Engagement Through Remote Interactions of Customers: Introducing METRIC

Jinan Y Azem III and Soon-gyo Jung (Qatar Computing Research Institute, Hamad Bin Khalifa University, Qatar); Joni Salminen (University of Vaasa, Qatar); Bernard J Jansen (Qatar Computing Research Institute, Qatar)

1570934241 User Quality of Experience and Profit Aware Task Allocation in Mobile Device Cloud

Zeneya Sharmin and Palash Roy (Green University of Bangladesh, Bangladesh); Md. Abdur Razzaque (University of Dhaka & Bangladesh, Bangladesh)

Session B8- Vehicular Networking and Security

Session Chair: **Hayla Nahom** (Hamad Bin Khalifa University, Qatar)

Room: Seminar Room 24

1570906884 VANET-Sec: A Framework to Secure Vehicular Ad-hoc Networks using a Permissioned Blockchain

Thabet Kacem (University of the District of Columbia, USA)

1570917364 Hybrid PLS-ML Authentication Scheme for V2I Communication Networks

Hala Amin, Jawaher Kaldari and Nora Mohamed (Hamad Bin Khalifa University, Qatar); Waqas Aman (HBKU, Qatar); Saif Al-Kuwari (Hamad Bin Khalifa University, Qatar)

1570923648 Performance Evaluation of Machine Learning-Based Misbehavior Detection Systems in VANETs: A Comprehensive Study

Hela Marouane (ESME, France); Abdulhalim Dandoush (University of Doha for Science and Technology (UDST), Qatar & ESME & L2TI Sorbonne University Paris Nord, France); Lamine Amour (ESME Sudria, France); Aiman Erbad (Hamad Bin Khalifa University, Qatar)

1570935347 Malicious Encrypted Network Traffic Detection using Deep Auto-Encoder With A Custom Reconstruction Loss

Ahmed Ramzi Bahlali (University of Toulon, France & University of Biskra, Algeria); Abdelmalik Bachir (The National School of Artificial Intelligence & Biskra University, Algeria); Abdelhakim Cheriet (University of Ouargla, Algeria)

1570906807 Deep Reinforcement Learning for Autonomous Navigation on Duckietown Platform: Evaluation of Adversarial Robustness

Abdullah Habib Hoseiny, Junaid Qadir and Saeid Ali Houti (Qatar University, Qatar)

1570923749 Zero Trust Security Strategy for Collaboration Systems

Kouadio Rodrigue N'goran (IMT Atlantique & INP-HB, France); Aguié Pacôme Bertrand Brou and Ghislain Koffi Pandry (ESATIC, Cote d'Ivoire); Jean-Louis Tetchueng (Universite Rennes 1, France); Yvon Kermarrec (IMT-Atlantique, France); Olivier Asseu (INP-HB, Cote d'Ivoire)

1570918717 Online Learning Approach for Jammer Detection in UAV Swarms using Multi-Armed Bandits

Noor Khial, Nema Ahmed, Reem Tluli, Elias Yaacoub and Amr Mohamed (Qatar University, Qatar)

Session B9- Image Processing and Networking

Session Chair: **Dr. Amjad Ali** (Hamad Bin Khalifa University, Qatar)

Room: Seminar Room 25

1570935156 Exploring Classification Models for Video Source Device Identification: A Study of CNN-SVM and Softmax classifier

Najmath Ottakath, Younes Akbari and Somaya Ali Al-maadeed (Qatar University, Qatar); Ahmed Bouridane (University of Sharjah, United Arab Emirates); Fouad Khelifi (Northumbria University at Newcastle, United Kingdom (Great Britain))

1570920440 Noise2Seg: Automatic Few-Shot Selection from Noisy Web Data for Underwater Tropical Fishes Segmentation

Nauman Ullah Gilal (HBKU, Qatar); Fahad Majeed and Khaled Al-Thelaya (Hamad Bin Khalifa University, Qatar); Mehak Khan (OsloMet, Norway); Jens Schneider and Marco Agus (HBKU, Qatar)

1570923774 Multi-scale-based network for Image Dehazing

Omar Elharrouss, Somaya Ali Al-maadeed, Leen Alinsari, Aya Zahra and Chaza Araji (Qatar University, Qatar)

1570933315 IPattern: Islamic-Inspired Pattern Generation Using Generative Adversarial Networks

Moutaz Saleh Saleh, Roudha Al-Rumaihi, Slafa Al-Dulaimi and Alaa Abashar (Qatar University, Qatar)

1570932249 Indoor multi-lingual scene text database with different views

Younes Akbari, Jayakanth Kunhoth, Omar Elharrouss, Somaya Ali Al-maadeed, Khalid Abualsaud, Amr Mohamed and Tamer Khattab (Qatar University, Qatar)

14:00 - 15:00

Keynote Speaker 4: Eng. David Fernandez Piñas (European Space Agency))

Title: Towards a Seamless Integration of Satellites in Future Path Aware, QoS Enabled, Multiple Access Networking for Multimedia Applications

Session Chair: Prof. Michele Luglio (University of Rome Tor Vergata, Italy)

Room: Minaretein Auditorium 00.019

15:30 – 17:00

Industry/Sponsors Session

Chair: **Prof. Aiman Erbad**, (Hamad Bin Khalifa University, Qatar)

Room: Minaretein Auditorium 00.019

Session Title: ***Empowering Innovation & entrepreneur ecosystem***

Presenters:

Shah Kamaly and **Waddah Hassan** (Digital Incubation Center – Ministry of Communications and Information Technology)

The session organized by the Digital Incubation Center at Qatar Ministry of Communications and Information Technology. The session aims to explain the role of the digital incubation center and shed light on the current incubations' programs such as IdeaCamp. The session also will feature some starts-ups that will share their experience with the audience (opportunities and challenges).

Proposed agenda

- a. Introduction to Digital Innovation Enablement & Success stories: 10-15min
- b. IdeaCamp: 10min
- c. Success stories – hear first-hand from our start up
 - i. Startup 1: 10min
 - ii. Startup 2: 10min
 - iii. Startup 3: 10min
- d. Q&A

Location: Auditorium, Minaretein, Education City, Doha – Qatar.

Its location link is: <https://maps.app.goo.gl/QuPKYuofvEewuUzf9>

Day 4 – Thursday, October 26, 2023

09:00 - 10:00

Keynote Speaker 5: Prof. Shichao Jin (Space Star Technology Co.,Ltd., China)

Title: Space-Ground Converged Intelligent Networking Technology

Session Chair: Prof. Tarek Bejaoui (University of Carthage, Tunisia)

Room: Minaretein Auditorium 00.019

10:00 - 11:00

Keynote Speaker 6: Eng. Giancarlo Varacalli (Italian Space Agency – ASI, Italy)

Title: Recent trends in space communications towards global connectivity – an ASI perspective

Session Chair: Prof. Michele Luglio (University of Rome Tor Vergata, Italy)

Room: Minaretein Auditorium 00.019

11:15 – 13:00

Session V9- AI/ML for Healthcare and Apps

Session Chair: **Dr. Hamada Al-Absi** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 20**

1570923065 Monitoring Medicine Quality Conservation: an IoT-based platform design

Josep Genovard-Oliver, Maria Frontera-Bergas, Miguel Vinaixa-Fernandez and Bartomeu Oliver-Riera (University of the Balearic Islands & Health Research Institute of the Balearic Islands (IdISBa), Spain); Jaume Ramis-Bibiloni (Universitat de les Illes Balears & Health Research Institute of the Balearic Islands (IdISBa), Spain); Eugenio Isern (University of the Balearic Islands & Health Research Institute of the Balearic Islands (IdISBa), Spain); Miquel Roca (University of Balearic Islands & Health Research Institute of the Balearic Islands (IdISBa), Spain); Bartomeu Alorda-Ladaria (University of the Balearic Islands & Health Research Institute of the Balearic Islands (IdISBa), Spain)

1570935256 AssureAIDoctor- A Bias-Free AI Bot

Yulia Kumar, Justin Delgado, Ethan Kupershtein, Brendan Hannon, Jenny Li and Patricia Morreale (Kean University, USA)

1570917950 A Deep Learning Approach for the Classification of Tuberculosis and Pneumonia using NIH Dataset

Bharti Moryani (California State University Fullerton, USA); Kanika Sood (California State University, Fullerton, USA); Kirti Chaudhary (California State University Fullerton, USA)

1570918221 Human Activity Recognition Using Ambient Sensors

Kunal Chhatrapati (California State University Fullerton, USA); Kanika Sood (California State University, Fullerton, USA); Purva Surve (California State University Fullerton, USA)

1570941942 Retinal Diseases Classification System using OCT Images Combined with CNNs Models

Amira Zrelli (Enit, Tunisia); Fatma Dhaoui (ISIMG, Tunisia)

1570933680 Three-Dimensional Numerical Demonstrating of Blood Light Absorption across Multilayered Biological Tissues

Mouna Dhmiri (ENIT, Tunisia); Yassine Manai (National Schools of Engineers of Tunis, Tunisia); Tahar Ezzedine (Enit, Tunisia)

1570935293 Explainability of Artificial Intelligence Systems: A Survey

Mazharul Hossain (University of Memphis, USA); Saikat Das (Utah Valley University, USA); Bhargavi Krishnamurthy (Siddaganga Institute of Technology, India); Sajjan Shiva (University of Memphis, USA)

Session V10- Cybersecurity and IoT

Session Chair: **Saeif Alhazbi** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 21**

1570925076 Packet Filtering and Sampling for Efficient Slow Denial of Service Detection in Resource Scarce IoT Networks

Andy Reed, Laurence Dooley and Soraya Kouadri (The Open University, United Kingdom (Great Britain))

1570932296 Enhancing IoT Security: Design and Evaluation of a Raspberry Pi-Based Intrusion Detection System

Mohammed Ibrahim El-hajj (Twente University, The Netherlands); Toghrul Garalov (University of Twente, The Netherlands)

1570933336 Addressing IoT Security Challenges: A Framework for Determining Security Requirements of Smart Locks leveraging MQTT-SN

Hemant Gupta and Amiya Nayak (University of Ottawa, Canada)

1570921378 Dual Autoencoders for Network-based Detection of Balot Attacks

Rym Moussaoui and Djihane Oum Keltoum Harouni (Université Paris Cité, France); Osman Salem (University of Paris Cité, France); Ahmed Mehaoua (University of Paris City, France)

1570927856 An IoT Security Risk Assessment Framework for Healthcare Environment

Mofareh Waqdan (University of Regina, Canada); Habib Louafi (TELUQ University & University of Regina, Canada); Malek Mouhoub (University of Regina, Canada)

Session V11- AI/ML in Linguistic and Human Behavior

Session Chair: **Dr. Mohammed Abegaz** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 26**

1570895049 Arabic sign language Datasets review and improvement

Alaa Jalal Tamimi (Palestine Polytechnic University & PPU, Palestine); Iyad Hashlamon (Palestine Polytechnic University, Palestine)

1570918229 Interpreting Live Video Sign Language and Translate into Text

Steven Rico (California State University Fullerton, USA); Kanika Sood (California State University, Fullerton, USA); Kevin Hsu and Ethan Trinh (California State University Fullerton, USA)

1570906904 On the Linguistic Limitations of ChatGPT: An Experimental Case Study

Mohammed Baziyad (University of Sharjah, United Arab Emirates); Ibrahim Kamel (University of Sharjah & Concordia University, United Arab Emirates); Tamer Rabie (University of Sharjah, United Arab Emirates)

1570937224 AIComprehend: An Adaptive Reading Comprehension Learning Platform using Machine Learning

Dominic John Mondia, Kyle Nathan Naranjo and Stephen Tristan Galamay (University of the Philippines Diliman, Philippines); Nestor Michael C. Tiglao (University of Maryland, USA)

1570912507 Cyberbullying Detection through Acoustic and Linguistic Analysis

Sara Zekri (Université Paris Cité, France); Osman Salem (University of Paris Cité, France); Aimen Silakhal (Université Paris Cité, France); Ahmed Mehaoua (University of Paris City, France)

1570906916 Toward Detection of Arabic Cyberbullying on Online Social Networks using Arabic BERT Models

Meshari Alfarah (University of Sharjah, United Arab Emirates); Ibrahim Kamel (University of Sharjah & Concordia University, United Arab Emirates); Zaher Al Aghbari (University of Sharjah, United Arab Emirates)

1570923789 A Combinatorial Approach to Cardinality Constraint Sampling Using Branch-and-Bound Technique

Sakshi Pandey and Amit Banerjee (South Asian University, India)

Session V12- AI/ML for Business and Financial Services

Session Chair: **Dr. Khaled Althelaya** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 28**

1570904379 Hybrid Machine Learning Model for predicting NASDAQ Composite Index

Zakia Zouaghia (University of Tunis El Manar, Tunisia & University of Tunis, Tunisia); Zahra Kodia Aouina (University of Tunis - Institut Supérieur de Gestion de Tunis, Tunisia); Lamjed Ben Said (Université de Tunis, Tunisia)

1570935230 A Federated Learning Approach to Banking Loan Decisions

Farag Ahmed Azzedin, Mustafa Ghaleb, Yasser El-Alfy, Raed Katib and Md. Kamrul Hossain (King Fahd University of Petroleum and Minerals, Saudi Arabia)

1570931499 Performance Analysis of Credit Card Fraud Analysis and Detection Machine Learning Algorithms

Kevin Coello, Kaiyue Zhou, Harsha Nutalapati and Nestor Michael C. Tiglao (University of Maryland, USA)

1570924168 Evaluation of Machine Learning Models to Forecast Inflation: Bangladesh as a Case Study

Labiba Binte Ismail, Mahira Ibnath Joytu, Tasnim Islam Plabon and Muhammad Shafayat Oshman (North South University, Bangladesh)

1570902691 Customer Satisfaction Toward Commercial E-Services in Saudi Arabia: A Sentiment Analysis

Dina Banjabi and Nora Almezeini (King Saud University, Saudi Arabia)

Session V13- Advances in Engineering for Smart Cities and Apps

Session Chair: **Hayla Nahom** (Hamad Bin Khalifa University, Qatar)

Room: **Classroom 31**

1570909727 Smart Environment Monitoring Systems For PM_{2.5} Prediction Using Deep Learning Models In Smart City

Marwa Faydi ; Amira Zrelli; Tahar Ezzedine (ENIT, University of Tunis El Manar, Tunisia)

1570923822 Stock movement prediction based on technical indicators applying hybrid machine learning models

Zakia Zouaghia (University of Tunis El Manar, Tunisia & University of Tunis, Tunisia); Zahra Kodia Aouina (University of Tunis - Institut Supérieur de Gestion de Tunis, Tunisia); Lamjed Ben Said (Université de Tunis, Tunisia)

1570926437 Blockchain, NFT, Federated Learning and Model Cards enabled UAV Surveillance System for 5G/6G Network Sliced Environment

Eranga Bandara and Peter Foytik (Old Dominion University, USA)

1570923730 Deep Neural Network based Automatic Litter Detection in Desert Areas Using Unmanned Aerial Vehicle Imagery

Guoxu Wang (Loughborough University, United Kingdom (Great Britain)); Andrew Leonce (Zayed University, United Arab Emirates); Hakim Hacid (Technology Innovation Institute, United Arab Emirates); Eran Edirisinghe (Keele University, United Kingdom (Great Britain))

1570895985 Deep Neural Networks based Multiclass Animal Detection and Classification in Drone Imagery

Changrong Chen (Loughborough University, United Kingdom (Great Britain)); Eran Edirisinghe (Keele University, United Kingdom (Great Britain)); Andrew Leonce (Zayed University, United Arab Emirates); Gregory Simkins (Shaybah Wildlife Sanctuary, Saudi Arabia); Tamer Khafaga and Moayyed Sher Shah (King Salman Royal Nature Reserve, Saudi Arabia); Umar Yahya (Islamic University in Uganda, Uganda)

1570906523 Ghaf Tree Detection from Unmanned Aerial Vehicle Imagery Using Convolutional Neural Networks

Guoxu Wang (Loughborough University, United Kingdom (Great Britain)); Andrew Leonce (Zayed University, United Arab Emirates); Eran Edirisinghe (Keele University, United Kingdom (Great Britain)); Tamer Khafaga (King Salman Royal Nature Reserve, Saudi Arabia); Gregory Simkins (Shaybah Wildlife Sanctuary, Saudi Arabia); Umar Yahya (Islamic University in Uganda, Uganda); Moayyed Sher Shah (King Salman Royal Nature Reserve, Saudi Arabia)

1570931100 MC-YOLOv5: A small target detection model based on YOLOv5

Yiming Li (Beijing-Dublin International College at BJUT, China); Yanxiu Jin (Beijing University of Technology & University College Dublin, China)

13:00 – 13:15

Closing Ceremony

Room: Minaretein Auditorium 00.019