



2018 IEEE Middle East & North Africa COMMunications Conference

MENACOMM 2018

Holy Spirit University of Kaslik (USEK)

Jounieh - Lebanon, April 18-20, 2018

Detailed Program

09:00 - 10:00 **Accommodation and Registration**

10:00 - 10:40 **Official Opening Ceremony** [John Paul II Amphitheater]

- **Dr. Sara Abou Chakra**, General Chair, Chair of IEEE ComSoc - Lebanon Chapter
- **Dr. Georges Yahchouchi**, Honorary Chair, Provost of the Holy Spirit University of Kaslik (USEK)
- **Rev. Fr. Prof. Georges Hobeika**, President of the Holy Spirit University of Kaslik (USEK)

10:40 - 11:40 **Panel Discussion** [John Paul II Amphitheater]

Chair: Dr. Tilda Karkour-Akiki, Holy Spirit University of Kaslik (USEK), Lebanon

Future of Next Generation Networks, Applications and Business in the MENA Region

- **Mr. Nicolas Sehnaoui**, Former Minister of Telecommunications in Lebanon
- **Mr. Raef Salha**, Vice President, HR, Admin & Legal Affairs of Alfa
- **Mr. Roger Ghorayeb**, CT Head, Growth Middle East West at Nokia
- **Mr. Tarek Abdel Sater**, Deputy General Manager at Huawei Technologies

11:40 - 12:00 **Coffee Break**

12:00 - 13:00 **Plenary Session I** [John Paul II Amphitheater]

Chair: Dr. Abdallah Makhoul, University of Bourgogne - Franche-Comté, France

- **Dr. Rafiqul Haque**, Cognitus, France
Big Data Science: The Trident of Supernatural Intelligent System
- **Prof. Zaher Dawy**, American University of Beirut, Lebanon
Cellular IoT: Challenges, Opportunities, and Solutions

13:00 - 14:15 **Lunch Break**

14:15 - 15:30 **Parallel Sessions I**

Session I-A: Security and Privacy (track 3) [Jean El Hawa Auditorium, Building H]

Chair: Dr. Jacques Bou Abdo, Notre Dame University / IEEE COMSOC Lebanon Chapter, Lebanon

On the Collision Property of Chaotic Iterations Based Post-Treatments over Cryptographic Pseudorandom Number Generator

Luigi Marangio, Christophe Guyeux and Jacques Bahi (University Bourgogne Franche-Comté, France)

On Blockchain Security and Relevant Attacks

Joanna Moubarak, Maroun Chamoun (Saint-Jospeh University, Lebanon) and Eric Filiol (ESIEA, France)

A Secure Client-Side Framework for Protecting the Privacy of Health Data Stored on the Cloud

Ali Sakr, Elias Yaacoub, Hassan Noura (Arab Open University, Lebanon), Mohammed Al-Husseini (Beirut Research and Innovation Center, Lebanon), Khalid Abualsaud, Tamer Khattab (Qatar University, Qatar), Mohsen Guizani (University of Idaho, USA)

S-DES: An Efficient & Secure DES Variant

Mohamad Noura, Raphaël Couturier (University Bourgogne Franche-Comté, France), Hassan Noura, Ali Chehab and Mohammad Mansour (American University of Beirut, Lebanon)

Novel Order preserving encryption Scheme for Wireless Sensor Networks

Elie Khoury, Maguy Medlej, Chady Abou Jaoude (Antonine University) and Christophe Guyeux (University Bourgogne Franche-Comté, France)

Session I-B: Hardware and Systems (track 1)

[Conference Hall, Building E]

Chair: Dr. Chadi Abou Rjeily, Lebanese American University / IEEE COMSOC Lebanon Chapter, Lebanon

Channel Hardware simulator Design and Implementation for MIMO Time-Varying 802.15.7 VLC indoor signals

Bachir Habib (Holy Spirit University of Kaslik, Lebanon) and Hanna Farhat (Lebanese University, Lebanon)

Dielectric Spectroscopy for Planar Materials Using Guided and Unguided Electromagnetic Waves

Hassan Shwaykani, Ali El-Hajj, Joseph Costantine, Fatima AlZahraa Asadallah (American University of Beirut, Lebanon) and Mohammed Al-Husseini (Beirut Research and Innovation Center, Lebanon)

Comparison of UHF RFID Loop Matching Antennas Based on Various Substrate-Metal Material Combinations

Nadeen R. Rishani, Julien Dubouil, Jean Marc Laheurte (Université Paris-Est/CNAM, France), Fatima Z. Gourari (Université de Tlemcen, Algeria), Raed M. Shubair (Massachusetts Institute of Technology, USA) and Sara Abou Chakra (Lebanese University, Lebanon)

FSO Cooperative All-Active and Selective Relaying Schemes with Backup RF Antennas

Mustapha Hamad and Chadi Abou-Rjeily (Lebanese American University, Lebanon)

15:30 - 15:45

Coffee Break

15:45 - 17:00

Parallel Sessions II

Session II-A: IoT, Cloud Computing & Smart Cities (track 3) [Jean El Hawa Auditorium, Building H]

Chair: Dr. Nadine Akkari, King Abdulaziz University, Saudi Arabia

Home Energy Management System Considering Modular and Deferrable Electric Loads Under Time-Variable Pricing Scheme [Invited Paper]

Sawsan Al Zahr (Telecom ParisTech, France)

Information Technology Infrastructure for Data Streams Native Filtering

Rayane El Sibai (Université Pierre et Marie Curie, France), Jacques Bou Abdo (Notre Dame University, Lebanon), Yousra Chabchoub, Raja Chiky (Institut Supérieur d'Electronique de Paris, France), Jacques Demerjian and Kablan Barbar (Lebanese University)

MAC layer-based evaluation of IoT technologies: LoRa, Sigfox and NB-IoT

Hussein Mroue, Sofiane Hamrioui, Benoit Parrein, Eduardo Motta Cruz (University of Nantes, France), Abbass Nasser (American University of Culture and Education, Lebanon) and Gilles Rouyer (SPIE City Networks, France)

Innovative Mobile Cloud Strategy that Supports Responsive Mobile Web Apps in Education iConnect via the Cloud

Ferial Malaeb-Khaddage (University of Balamand, Lebanon) and Henry Larkin (Deakin University, Australia)

Safe Driving: A Mobile Application for Detecting Traffic Accidents

Samah Jamal, Houssam Zeid, Mohammad Malli and Elias Yaacoub (Arab Open University, Lebanon)

Session II-B: Positioning and Signaling (track 1)

[Conference Hall, Building E]

Chair: Dr. Bachir Habib, Holy Spirit University of Kaslik (USEK), Lebanon

Robust Radio Resource Allocation for Heterogeneous Traffic in PD-NOMA-Based HCNs

Paeiz Azmi, Ali Mokdad, Mohammad Moltafet and Nader Mokari (Tarbiat Modares University, Iran)

Optimization of Indoor Radio Coverage

Youmni Ziade (Beirut Arab University, Lebanon)

Study the Estimated Distance Error in Indoor Localization using UHF-RFID

Elias Hatem, Sara Abou-Chakra, Bachar El-Hassan (Lebanese university, Lebanon), Elizabeth Colin, Catherine Marechal (ESIGETEL, France) and Jean-Marc Laheurte (Paris Est University, France)

Direction of Arrival Estimation for LTE-Advanced and 5G in the Uplink

Mohammad Haroun, Hussam Ayad, Jalal Jomaah (Lebanese University, Lebanon), Marta Cabedo-Fabrés and Miguel Ferrando-Bataller (Universidad Politécnica de Valencia, Spain)

Thursday April 19, 2018

08:30 - 09:00 **Accommodation and Registration**

09:00 - 10:00 **Plenary Session II** [Jean El Hawa Auditorium, Building H]

Chair: Dr. Yehia Taher, Versailles Saint-Quentin-en-Yvelines University, France

- **Prof. Salah Eddine Elayoubi**, Orange Labs, France

D2D communications for mobile network offload in 5G networks

- **Dr. Rani Makke**, NOKIA/Radio Frequency Systems, United Arab Emirates

Base Station Antennas in the era of broadband mobile networks

10:00 - 10:15 **Coffee Break**

10:15 - 11:45 **Parallel Sessions III**

Session III-A: Wireless Sensor Networks (track 3) [Jean El Hawa Auditorium, Building H]

Chair: Dr. Nadine Abbas, American University of Beirut / IEEE COMSOC Lebanon Chapter, Lebanon

Wireless Multimedia Sensor Network deployment for disparity map calculation

Anthony Tannoury, Rony Darazi (Antonine University), Christophe Guyeux and Abdallah Makhoul (University Bourgogne Franche-Comté, France)

A New Autonomous Data Transmission Reduction Method For Wireless Sensors Networks

Gaby Bou Tayeh, Abdallah Makhoul, David Laiymani (University Bourgogne Franche-Comté, France) and Jacques Demerjian (Lebanese University)

Distributed Data Aggregation based Modified K-means Technique for Energy Conservation in Periodic Wireless Sensor Networks

Ali Kadhum Idrees (University of Babylon, Iraq), Wathiq Laftah Al-Yaseenb (Al-Furat-Al-Awsat Technical University, Iraq), Mohamad Abou Taamc and Oussama Zahw (American University of Culture and Education, Lebanon)

Combining Compression and Clustering Techniques to Handle Big Data Collected in Sensor Networks

Hassan Harb (American University of Culture and Education, Lebanon) and Chady Abou Jaoude (Antonine University)

On the Performance of Resource-aware Compression Techniques for Vital Signs Data in Wireless Body Sensor Networks

Joseph Azar, Abdallah Makhoul, Raphaël Couturier (University Bourgogne Franche-Comté, France), Rony Darazi (Antonine University) and Jacques Demerjian (Lebanese University)

Session III-B: Performance Analysis and Coding (track 1)

[Conference Hall, Building E]

Chair: Dr. Ahmad El Hajj, Beirut Arab University / IEEE COMSOC Lebanon Chapter, Lebanon

Decentralized Joint Cache-Channel Coding over Erasure Broadcast Channels

Sarah Kamel, Michèle Wigger (Télécom ParisTech, France) and Mireille Sarkiss (CEA, France)

Performance Analysis of Fisher-Snedecor F Composite Fading Channels

Taimour Aldalgamouni (Jordan University of Science and Technology, Jordan), Mehmet Cagri Ilter, Halim Yanikomeroglu (Carleton University, Canada) and Osamah S. Badarneh (University of Tabuk, Saudi Arabia)

Performance Assessment of Linear Precoding for Multi-User Massive MIMO Systems on a Realistic 5G mmWave Channel

Mariam El Hassan, Charlotte Langlai (IMT Atlantique, France) and Ammar El Falou (Lebanese University, Lebanon)

Hybrid Precoding Design with Maximum Likelihood Estimation for Millimeter Wave MIMO Systems

Isa Altoobaji and Mohab A. Mangoud (University of Bahrain, Bahrain)

The Outage Probability of Mobile Wireless networks over η - μ Fading Channel

Ashraf Al-Rimawi, Jamal Siam and Ali Abdo (Birzeit University, Palestine)

11:45 - 13:15

Parallel Sessions IV

Session IV-A: Big Data & Data Mining (track 3)

[Jean El Hawa Auditorium, Building H]

Chair: Mr. Riemer Brouwer, AmanIT, Lebanon

An Improved Non-Personalized Combined-Heuristic Strategy for Collaborative Filtering Recommender Systems

Georges Chaaya, Elisabeth Metais (CNAM, France), Jacques Bou Abdo (Notre Dame University, Lebanon), Raja Chiky (Institut Supérieur d'Electronique de Paris, France), Jacques Demerjian and Kablan Barbar (Lebanese University)

Similarity Measures for Collaborative Filtering Recommender System

Lamis Al Hassanieh, Jacques Bou Abdo (Notre Dame University, Lebanon), Chady Abou Jaoude (Antonine University), Jacques Demerjian (Lebanese University)

Combining Web Data Extraction and Data Mining Techniques to Discover Knowledge

Nathalie Bouldoukian (Holy Spirit University of Kaslik, Lebanon)

Geopolitical interactions from reduced Google matrix analysis of Wikipedia

Samer El Zant, Katia Jaffrès-Runser and Dima Shepelyansky (University of Toulouse, France)

Feature Selection Approach based on Hypothesis-Margin and Pairwise Constraints

Samah Hijazi, Denis Hamad (Université du Littoral Côte d'Opale), Mariam Kalakech and Ali Kalakech (Lebanese University)

Survey: When semantics meet Crowdsourcing to enhance Big Data Variety

Houssein Dhayne, Rima Kilany (Saint-Joseph University, Lebanon) and Maria Sokhn (HES-SO Valais Wallis, Switzerland)

Session IV-B: QoS & Fault Analysis (track 3)

[Conference Hall, Building E]

Chair: Miss. Marie-Rita Hojeij, Holy Spirit University of Kaslik (USEK), Lebanon

TOBTD: Throughput Debugging in Total-Order Broadcast Systems

Mohamad-Jaafar Nehme (Université de Grenoble Alpes, France) and Abbass Zein Eddine (Université du Havre, France)

Fault Tree Analysis for the Intelligent Vehicular Networks

Abdallah Dabboussi, Raed Kouta, Jaafar Gaber, Maxime Wack (University of Technology of Belfort-Montbéliard, France), Bachar A. ElHassan (Lebanese University) and Lina Nachabe (American University of Culture and Education, Lebanon)

Streaming and Playback of 16K 360° Videos on the Web

Louay Bassbous, Stefan Pham and Stephan Steglich (Fraunhofer FOKUS, Germany)

A performance evaluation of data streams sampling algorithms over a sliding window

Rayane El Sibai (Université Pierre et Marie Curie, France), Yousra Chabchoub, Raja Chiky (Institut Supérieur d'Electronique de Paris, France), Jacques Demerjian and Kablan Barbar (Lebanese University)

Security and QoS Guarantee-based Resource Allocation within Cloud Computing Environment

Mohamad Hamze (University of Burgundy, France), Hassan Harb, Oussama Zahwe and Mohamad Abou Taam (American University of Culture and Education, Lebanon)

13:15 - 14:30

Lunch Break

14:30- 15:00

Plenary Session III

[Jean El Hawa Auditorium, Building H]

Chair: Dr. Carol Azar, Lebanese University, Lebanon

- **Prof. Christophe Guyeux**, University Bourgogne Franche-Comté, France

Collaborative Body Sensor Network management while integrating passive sensors in hostile environments

15:00 - 16:00

Parallel Sessions V

Session V-A: 5G & Software Defined Network (track 3)

[Jean El Hawa Auditorium, Building H]

Chair: Dr. Chafic Mokbel, University of Balamand, Lebanon

Software-defined Networking-based Resource Management in 5G HetNet

Rami Khoder (University of Versailles Saint Quentin, France), Rola Naja (Lebanese University, Lebanon)

SDN-Based Vertical Handover Decision Scheme for 5G Networks

Jacky Rizkallah (Saint Joseph University, Lebanon) and Nadine Akkari Adra (King Abdulaziz University, Saudi Arabia)

NFV/SDN-based vEPC Solution in Hybrid Clouds

Hassan Hawilo, Abdallah Shami (University of Western Ontario, Canada) and Lingxia Liao, Victor Leung (University of British Columbia, Canada)

Optimization of the Implementation of Network Slicing in 5G RAN

Nazih Salhab, Rami Langar (University Paris-Est, France), Salah El Falou, Rana Rahim-Amoud (Lebanese University, Lebanon) and Salah Eddine Elayoubi (CentraleSupélec, France)

Chair: Dr. Marc Ibrahim, Saint Joseph University, Lebanon

Enabling and deploying long-range IoT image sensors with LoRa technology [Invited paper]

CongDuc Pham (University of Pau, France)

Cross Entropy Algorithm for Improved Soft Fusion-based Cooperative Spectrum Sensing in Cognitive Radio Networks

Ayman A. El-Saleh, Mahmoud A. M. Albreem (A'Sharqiyah University, Oman), Tauseef R. Ahad and Waziha Raquib (Multimedia University, Malaysia)

ComLoB: Link quality and queuing delay based Composite routing protocol for traffic Load Balancing in WSNs

Hamadoun Tall, Gérard Chalhoub, Michel Misson (Clermont Auvergne University/LIMOS CNRS, France)

16:00 - 16:15 **Coffee Break**

16:15 - 17:30 **Session VI: BSN & E-Health (track 3) [Jean El Hawa Auditorium, Building H]**

Chair: Dr. Charbel Fares, Holy Spirit University of Kaslik (USEK), Lebanon

Collaborative Body Sensor Networks: Taxonomy and Open Challenges

Nadine Bou Dargham, Jacques Bou Abdo (Notre Dame University, Lebanon), Jacques Demerjian (Lebanese University), Christophe Guyeux and Abdallah Makhoul (University Bourgogne Franche-Comté, France)

General Semantic System for Monitoring & Assisting Diabetes patient "MySmart Diabetes OntoREference" Ontology

Lina Nachabe (American University of Culture and Education, Lebanon), Marc Girod-Genet (Telecom Sud Paris, France), Bachar ElHassan, Dima AlMouhammad (Faculty of Engineering, Lebanon)

Efficient Cluster-Based Routing Algorithm for Body Sensor Networks

Nadine Bou Dargham, Jacques Bou Abdo (Notre Dame University, Lebanon), Jacques Demerjian (Lebanese University), Christophe Guyeux (University Bourgogne Franche-Comté, France) and Talar Atechian (Antonine University)

Intelligent Eye: A Mobile Application for Assisting Blind People

Milios Awad, Jad El Haddad, Edgar Khneisser, Elias Yaacoub, Mohammad Malli (Arab Open University, Lebanon) and Tarek Mahmoud (Touch Mobile Operator, Lebanon)

Smart-Phone based System to Monitor Walking Activity: mHealth Solution

Rami Yared (Bishop's University, Canada), Chady Abou Jaoude (Antonine University) and Jacques Demerjian (Lebanese University)