



FINAL PROGRAM



Professor Dr. Amin Haj-Ali

**Welcome Message
ICCA 2018
General Chairs**



Professor Dr. Jihad M. Alja'am

Welcome to the third edition of the International Conference on Computer and Applications, ICCA'18. This year's edition, in Beirut, includes papers covering a vast range of topics from hardware implementations, to virtual reality, to cybersecurity and much more. With the ubiquity of computing in our lives, the opportunity to share and collaborate about these topics is valuable. ICCA'18 provides such an opportunity, as such, it's no wonder that ICCA'18 received 128 paper submissions, with 84 being accepted for presentation.

The world is on the cusp of technological revolutions driven by computing. Artificial Intelligence and the Internet of Things are two such computing based revolutions. We are about to become much more dependent on applications being designed and trialed today in our universities and research labs. With such a fast rate of development in these socially and economically influential fields, we would like to thank the International University of Beirut, BIU, for hosting this forum that allows international and Lebanese researchers to share ideas, experiences and opinions for the purpose of enhancing our knowledge and use of emerging computing technologies.

*Amin Haj-Ali,
Jihad ALJa'am,*

Keynote Speaker: Professor Dr. Alim Rüstem Aslan

Istanbul Technical University (ITU), Department of Astronautical Engineering



Prof. Aslan graduated as an Aeronautical Engineer from the ITU Department of Aeronautical Engineering. He received his MSc degree from the same department in 1985. Then, he completed the Diploma Course of the von Karman Institute for Fluid Dynamics (Belgium) with a scholarship in 1986. He received his Ph.D. from the same institute (aeronautics and aerospace department) together with Universite Libre de Bruxelles in 1991. He worked as an adjunct professor in Old Dominion University, USA, from mid 2001 to mid 2002. Prof. Dr. A. Rüstem Aslan served as the head of the Department of Astronautical Engineering at Istanbul Technical University (ITU) from 2004 to end of 2013. He is currently the Manager of Space Systems Design and Test Lab. where many nanosatellites developed since 2007, and Chair of Rotorcraft Technologies Graduate Program, in addition to other various duties.

Prof. Aslan's research interests include the design, analysis and development of nanosatellites (four in orbit), manned and unmanned rotorcraft systems, computational fluid dynamics and aerodynamics, and defense and education technologies. Dr. Aslan has authored/ co-authored over hundred and seventy technical publications (full-length). Dr. Aslan in addition to academic teaching and advising duties in the field of aerospace engineering, reviews papers for several international journals and acts as consultant and inspector for large scale national and industrial projects. His about sixty research projects have been sponsored by various civil and military funding agencies and industries. He has been leading many satellite projects with successful launches into orbit, including the first satellite made in Turkey. Prof. Aslan is teaching Spacecraft System Design at ITU and Air Force Academy. He is a member of IAF, founding member of the Turkish Amateur Satellite Society, AMSAT-TR (TAMSAT) and Turkish Universities Space Technologies Society (UTEB/UNISEC-TR), and UNISEC-GLOBAL. He is also the National Panel Member in NATO STO-AVT and co-chair of the Small Satellites Research Group. Dr. Aslan, also, regularly delivers seminars and speeches on space technologies in different institutions such as elementary and high schools, clubs, universities, retirement houses, meetings, TV programs, etc. to increase 'space awareness' of the general public.

Title: Small Satellite Technologies and CubeSats

The year of 2017 has been home to a record number of CubeSats (about 300) placed into orbit. This trend is expected to continue growing further. As a low-cost fast delivery space assets, CubeSats (special form of small satellites) are creating novel opportunities for all the nations very poor or very rich. The present talk will introduce "Small Satellite Technologies and the CubeSatellites including those developed in Turkey by the Space Systems Design and Test Laboratory established and managed by Prof. Dr. Alim Rüstem Aslan.

Keynote Speaker: Mr. Wael Elrifai

Director of Enterprise Solutions / Pentaho



Mr. Wael Elrifai is an avid technologist and management strategist, bridging the divide between IT and business as Pentaho’s EMEA Director of Enterprise Solutions. He’s been working in machine learning, artificial intelligence, and big data for the past decade.

Mr. Wael has served clients across North America, EMEA, and APAC and has presented at conferences worldwide as well as having been quoted in the Financial Times and Forbes, among others.

With graduate degrees in both electrical engineering and economics, Mr. Wael is a member of the Association for Computing Machinery, the Special Interest Group for Artificial Intelligence, the Royal Economic Society, and Chatham House.

Mr. Wael also serves on the boards of two charitable organizations and enjoys tinkering with “bleeding edge” technology, private aviation, and adventure travel.

Title: AI & IOT for Good

Wael Elrifai shares his experience working in the IoT and AI space; covering complexities, pitfalls, and opportunities to explain why innovation isn’t just good for business—it’s a societal imperative.

Keynote Speaker: Professor Rola Naja

Professor at the Lebanese University, Faculty of Science

Biography. Rola Naja is Professor at the Lebanese University-Faculty of Science. She is active research member at Lastre Laboratoty-Doctoral School of Science and Technology. She is as well a research member at the Li-PARAD Laboratory (CNRS UMR 8114) of Versailles University. She was awarded a PhD in wireless mobile networks at the Ecole Nationale Supérieure des Telecommunications (Telecom-Paritech) and a Habilitation to Direct Research (HDR) in wireless networking from the University of Versailles Saint Quentin. Her research studies lie in the area of quality of service, performance evaluation, resource allocation and mobility handling in wireless multiservice networks. She contributed to many French and European industrial projects, among others: Ambience, Minicell, Urbanisme des Radiocommunications, SOAPS and CoDrive. She served as Assistant Professor at ESIEE-Engineering, University of Paris Est. For her research, she was elected as Excellent Young Affiliate Member in the Academy of Science TWAS-Unesco. In 2013, she was awarded the FICRA Innovation in Scientific Research for Young Researcher Prize from the Agence Universitaire de la Francophonie (AUF). In 2016 and 2017, she was recipient for the US Academy of Science grant to contribute to the Arab American Frontiers of Science and networking. She is TPC member of many IEEE conferences. Her research works were published in International journals and conferences. Recently, she edited and co-authored a book focusing on vehicular networking published by Springer-New York.

5G Networks for Massive IoT

Future 5G networks will accommodate an explosive data traffic leading to a spectrum crunch. Therefore, sustained research and development focus on creating a 5G environment that can meet market demands: virtually zero latency, 1Gbps data rate, 10-100 devices, Machine to Machine (M2M) ultra low cost technology and a portfolio of applications.

In 5G network, the Internet of Things revolution is a key enabler of the connectivity vision by delivering M2M and machine-to-person communications on a massive scale. With new standards targeting the connectivity requirements of Massive IoT applications, cellular networks can deliver reliable, secure and diverse IoT services using existing network infrastructure

To meet the Massive IoT segment requirements, 3GPP has taken evolutionary steps on both the network side and the device side. No single technology or solution is ideally suited to all the different potential Massive IoT applications, market situations and spectrum availability. We will be addressing the main solutions focusing on Low-Power Wide-Area (LPWA) technologies, LTE-M and Narrowband IoT (NB-IoT). The presentation will shed the light on the 5G networks challenges and describe the solutions proposed in the research and development sector.

Keynote Speaker: Mr. Ali Saleh

Senior Vice President & Chief Commercial Officer, MENAT/SSA GE Digital



Mr. Ali Saleh is Senior Vice President and Chief Commercial Officer of GE Digital for the Middle East, Africa & Turkey. He is a GE veteran with over two decades of experience in digital industrial transformation, information technology, engineering and turnkey projects in the US, France and Middle East.

He leads GE's strategic growth initiatives, supporting partners in the region to look at digital industrial transformation, and focuses on further strengthening localized innovation in the digital space through industry and academia linkages. In addition to leading all GE Digital commercial activities including Sales, Commercial Operations, Marketing, and Professional Services, Ali also works with the broader GE Digital organization, including Channels & Alliances, Support, and Foundries teams, and to accelerate regional business development opportunities. Mr. Saleh has a strong understanding of the region, especially in the IT, engineering, and healthcare sectors, having served over 16 years in the region. Previously, he was President & CEO of GE Healthcare, Saudi Arabia.

Prior to this, Mr. Saleh had a long history with GE Healthcare, serving as General Manager for Market Development for the Eastern & African Growth Markets region; as Region Service Manager for the Middle East; Chief Marketing Officer for Services in Emerging Markets; and General Manager for Healthcare Solutions & IT. He served as Executive Director and Board Member of three Saudi joint ventures. Mr. Saleh also worked as General Manager for GE Global eXchange Services and as Country Sales Manager for GE Information Systems in the Middle East. He started his career as an Engineering Integration Specialist for GE Information Services in Maryland, USA. Mr. Saleh holds a Master's Degree in Systems Engineering from the University of Maryland, and a Bachelor of Science in Electrical Engineering from the University of Maryland, College Park. He also holds an Associate's Degree in Engineering Science from Montgomery College in Rockville, Maryland, USA.

Title: Digital Industrial Transformation Journey

We will cover the journey required to digitize various industries by delivering outcome and productivity. This will require organizations to review current state, define heat map and optimization opportunities, industrial performance entitlement and desired state. Digital platform and use cases cut through to make the change last.

Tutorials: British University in Cairo - EGYPT

Prof. Samy Ghoneimy - British University in Cairo - EGYPT

Reconfigurable and Scalable Software Defined-based on Chip Orchestrator and Interconnection Network for next generation Tera-Scale Computing Systems.

Abstract. The ultra-high frequency digital transmission characteristics of intra- and inter-chip communication have been the subject of intense research over the past few years. The desire for ultra-high speed data transmission, including that of video processing, real time applications and big data management and processing, and the need for intra- and inter-chip broadband communication for such applications has been driving forces for attaining an ultra-large bandwidth and ultra-small delay time of intra and inter-chip communication while still maintaining a low power consumption. The potential for intra- and inter-chip optical link improvements provides a compelling incentive for studying and analyzing photonic switch performance. Due to the heterogeneity of recent chips and the large number of internal cores several reconfigurable Optic Network on Chip (ONoC) have been proposed so far, they either suffer from considerable area overhead and low efficiency as a result of fully interconnected architecture, or they cannot be adapted to different topologies in the same platform. Thus, this research tries to propose a suitable reconfigurable photonic network layer (orchestration layer using the concept of software-defined networks (SDN)) for simultaneous transmission of different wavelengths per bidirectional waveguides and their effect on the overall power consumption under random traffic patterns is proposed. The proposed orchestrator consists of four sub-layers; namely the virtualizer, management, Photonic routing, and a control layers. These sub-layers can work separately or simultaneously. The proposed orchestrator would dynamically change the network topology according to the application request and the available resources in the optical layer at the request time.

Prof. Omar Karam - British University in Cairo - EGYPT

Cognitive Science Models for Human Behavior Detection and Thinking Ability Enhancement.

Abstract. This talk demonstrates how pedagogical theories, cognitive and other relevant scientific disciplines contribute to the design and production of a compact device that is equipped with the necessary data acquisition systems and software tools and is able to detect human behaviour, evaluate and enhance human thinking levels and abilities to help increase the innovation capacity of education and industry. This research is addressing intelligent computational environments for stimulating and enhancing human creativity process. This is a multi-disciplinary research including computation alcreativity, brain-based research, cognitive and learning sciences, and human computer interface (HCI). This work will establish theories and models for hybrid (human-computer) systems to be demonstrated by fully functional prototypes of computational environments, incorporating progress in relevant areas such as AI, psychology, sociology, neuroscience and cognitive science. The proposed project will demonstrate how the theoretical insights gained in this project that are based on latest advances in pedagogical, cognition and other relevant scientific disciplines, and it will contribute to the development of; a national standard human creativity (cognitive) and higher order thinking skills assessment tests using cognitive and learning sciences, a human brain and mental simulation model, a human cognitive, Generic Abstract Intelligence (GAI) and innovation simulation models that provide a foundation to explain the mechanisms of advanced natural intelligence such as thinking, learning, and inferences. Cognitive models of teaching strategies and learning styles will be provided and tested against actual sample sets that record inputs, behaviour and assess outcomes, development of set of mind games that well fit in the formally described decision process and will be used for enhancing the personnel thinking, finally, development of innovation abilities and solutions for teaching national curricular topic(s) in primary and/or secondary education using gamification and human computer interface (HCI) sciences.

ICCA'18 Program at a glance

Day 1: Wednesday, July 25, 2018			
08:30-17:00	Registration		
09:00-10:00	Opening Ceremony (Emerald)		
10:00-10:30	<i>Coffee Break</i>		
10:30-11:30	Keynote Speaker - 1: Professor Dr. Alim Rüstem Aslan <i>Small Satellite Technologies and CubeSats (Emerald)</i>		
11:30-12:30	Keynote Speaker - 2: Mr. Wael O. Elrifai <i>AI & IOT for Good (Emerald)</i>		
12:30-14:00	<i>Lunch Break</i>		
14:00-16:00	<i>Special session (Ruby):</i> Reconfigurable Computing	<i>Session 1 (Saphir 1):</i> IoT & Machine Learning	<i>Session 2 (Saphir 2):</i> Smart Grid & Power Systems
	<i>Coffee Break</i>		
16:00-16:30	<i>Coffee Break</i>		
16:30-18:30	<i>Session 3 (Ruby):</i> e-Commerce, eEducation & Games	<i>Session 4 (Saphir 1):</i> Bioinformatics & Biomedical Systems	<i>Session 5 (Saphir 2):</i> Communication Systems
	Gala Dinner: BY INVITATION ONLY		
Thursday, July 26, 2018			
09:00-09:15	Welcome word: ICCA'18 Chair		
09:15-10:00	Keynote Speaker: Prof. Rola Naja <i>5G Networks for Massive IoT (Emerald)</i>		
10:00-10:30	<i>Coffee Break</i>		
10:30-11:30	Keynote Speaker: Mr. Ali Saleh <i>Digital Industrial Transformation Journey (Emerald)</i>		
11:30-12:30	<i>Session 6 (Ruby):</i> ULF Workshop - WCTCS'18	<i>Session 7 (Saphir 1):</i> Computer Security & Virtual Reality	<i>Session 8 (Saphir 2):</i> Image Processing
	<i>Lunch Break</i>		
14:00-15:00	<i>Seminar (Ruby):</i> National Instruments ICCA seminar	ICCA'18 Tutorial 1 (BUE) (Saphir 1)	
15:00-16:00		ICCA'18 Tutorial 2 (BUE) (Saphir 1)	
16:00-16:30	<i>Coffee Break and Networking</i>		
16:30-18:30	<i>Session 9 (Ruby):</i> Varieties 1	<i>Session 10 (Saphir 1):</i> Varieties 2	<i>Session 11 (Saphir 2):</i> Software & Hardware Application Systems
18:30 – 18:35	ICCA'18 – Conclusion and Closure (Emerald)		

Day 1: Wednesday, July 25th, 2018

Wednesday, July 25th, 09:00 - 10:00

Opening Ceremony

Room: Emerald

Wednesday, July 25th, 10:00 - 10:30

Coffee Break

Wednesday, July 25th, 10:30 - 11:30

Keynote Speaker: Professor Dr. Alim Rustem Aslan (ITU Faculty of Aeronautics and Astronautics, Head of the Astronautical Engineering Department)

Small Satellite Technologies and CubeSats

Room: Emerald

Chair: Dr. Mustapha Hamad (Notre Dame University-Louaize, Lebanon)

Wednesday, July 25th, 11:30 - 12:30

Keynote Speaker: Mr. Wael O. Elrifai (Director of Enterprise Solutions, Pentaho "A Hitachi Group Company")

AI & IOT for Good

Room: Emerald

Chair: Prof. Adnan Harb (International University of Beirut, Lebanon)

Wednesday, July 25th, 12:30 - 14:00

Lunch Break

Wednesday, July 25th, 14:00 - 16:00

Special Session: Reconfigurable Computing

Room: Ruby

Chairs: Ali Chamas Al Ghouwayel (Lebanese International University, Lebanon),
Mohamad Mroue (Lebanese University, Lebanon)

On the Hardware Implementation of a Reduced Complexity UPMC Chain

[Majed Saad](#), [Mohammad Alawieh](#) and [Ali Chamas Al Ghouwayel](#) (Lebanese International University, Lebanon); [Hussein Hijazi](#) (Lebanese International University (LIU), Lebanon); [Samir Omar](#) (Lebanese International University, Lebanon)

FPGA Implementation of a Safety System-on-Chip based on 1004 Architecture using LEON3 Processor

[Ali Hayek](#) and [Josef Boercsoek](#) (University of Kassel, Germany); [Mohamed Abdelawwad](#) (University of Kassel, Germany & Al-Azhar University, Egypt); [Ahmed Alsuleiman](#) (University of Kassel, Germany)

NISC Design Experience of Flexible Architectures for Digital Communication Applications

[Mostafa Rizk](#) (Lebanese International University & Lab-STICC, Lebanon); [Amer Baghdadi](#) (Télécom Bretagne, France); [Michel Jezequel](#) (IMT Atlantique, France); [Ali Chamas Al Ghouwayel](#) (Lebanese International University, Lebanon)

FMCW Implementation on LabVIEW

[Moustafa Khrayzat](#) (Lebanese International University, Lebanon); [Samiha Mokdad](#) (Lebanese International University, Lebanon); [Ali Bazzi](#) (Lebanese International University & LIU, Lebanon); [Hussein Hijazi](#) (Lebanese International University (LIU), Lebanon); [Ali Chamas Al Ghouwayel](#) and [Majed Saad](#) (Lebanese International University, Lebanon)

Enhanced Throughput and Energy-Efficient MRAM-based NB-LDPC Decoder

[Mohammad Sabbah](#) (Lebanese International University, Lebanon); [Mostafa Rizk](#) (Lebanese International University & Lab-STICC, Lebanon); [Ali Chamas Al Ghouwayel](#) and [Samir Omar](#) (Lebanese International University, Lebanon); [Zouhair El-Bazzal](#) (Lebanese International University & School of Engineering, Lebanon)

Core/Task Associations For efficient application implementation on network-on-chip

[Maamar Bougherara](#) (LIMPAF Laboratory Bouira University & Ecole Normale Supérieure Kouba, Algeria); [Rahmoun Rym](#) (Ecole Normale Supérieure Kouba, Algeria); [Sadok Amel](#) (Ecole Normale Supérieure Kouba, Algeria); [Nadia Nedjah](#) and [Luiza de Macedo Mourelle](#) (State University of Rio de Janeiro, Brazil); [Djamal Bennouar](#) (Saad Dahlab University, Algeria)

Gender and Identity Recognition using LabVIEW

[Hamoud Younes](#) (LIU, Lebanon); [Abdel Mehzen Ahmad](#) and [Ziad Noun](#) (Lebanese International University, Lebanon); [Mostafa Rizk](#) (Lebanese International University & Lab-STICC, Lebanon); [Zouhair El-Bazzal](#) (Lebanese International University & School of Engineering, Lebanon)

Invited talk & Demo: Applying Partial Reconfiguration on Programmable ARM/FPGA SoC Platform for Vertical Handover in Context of Heterogeneous Networks.

[Mohamad-Al-Fadl Rihani](#) (IETR-INSA, Rennes, France), [Mohamad Mroue](#) (Lebanese University, Beirut, Lebanon), [Fabienne Nouvel](#), [Jean-Christophe Prevotet](#) (IETR-INSA, Rennes, France), [Yasser Mohanna](#) (Lebanese University, Beirut, Lebanon)

Session 1: Internet of Things & Machine Learning

Room: Saphir 1

**Chairs: Professor Ali El-Zaart (Beirut Arab University, Lebanon),
Professor Adnan Harb (International University of Beirut, Lebanon)**

Using Internet of Things in a Learning Management System for Campus Access Control [Pilar Wakim](#) (Arts, Sciences and Technology University, Lebanon); [Khaleel Mershad](#) (AUL, Lebanon)

Self-Powered IoT-Enabled Water Monitoring System

[Omran Al Rshid Aba Zeed](#) and [Naram Mhaisen](#) (Qatar University, Qatar); [Youssef Al Hariri](#) (University of Edinburgh, United Kingdom (Great Britain)); [Abdullah Alsalemi](#) and [Osama Halabi](#) (Qatar University, Qatar)

An IoT Monitoring and Control Platform for Museum Content Conservation

[Ghada Alsuhli](#) and [Ahmed Khattab](#) (Cairo University, Egypt)

Intelligent Alarm System to Protect Small, Valuable Items

[Ahmed El Kashef](#) and [Nahla Barakat](#) (The British University in Egypt (BUE), Egypt)

Enhanced Time and Wavelength Division Multiplexed Passive Optical Network (TWDM-PON) for Triple-play Broadband Service Delivery in FTTx Networks

[Samy Ghoniemy](#) (BUE, Cairo)

A High Availability Networked Control System Architecture for Precision Agriculture

[Hassan Ibrahim](#) and [Norhan Mostafa](#) (AUC, Egypt); [Hassan Halawa](#) (American University in Cairo, Egypt); [Malak ElSalamouny](#) (Khalifa University, United Arab Emirates); [Ramez M Daoud](#) (American University in Cairo & KAMA Engineering Office, Egypt); [Hassanein H. Amer](#) (American University in Cairo (AUC), Egypt); [Amr Shaarawi](#) (AUC, Egypt); [Ahmed Khattab](#) (Cairo University, Egypt); [Hany M. El-Sayed](#) (Cairo University & Faculty of Engineering, Egypt)

An Energy-efficient system for artifacts preservation and occupant comfort
[Shereen Taie](#) (Faculty of Computers and Information-Fayoum University, Egypt); [Esraa Elhariri](#) (Fayoum University, Egypt)

Twitter Sentiment Analysis of New IKEA Store Using Machine Learning
[Yujiao Li](#) and [Hasan Fleyeh](#) (Dalarna University, Sweden)

Session 2: Smart Grid & Power Systems

Room: Saphir 2

Chairs: Professor Nizar Al-Houlou (University Detroit Mercy, USA),
Dr. Ali Hamie (Arts Sciences & Technology University in Lebanon)

Integrating Small Scale Green Energy into Smart Grids: Prediction for Peak Load Reduction

[Sonam Rinchen](#), [Yassine Abdulsalam](#), [Kevin Schwartzentruber](#) and [Hamsa Ahmed](#) (Lakehead University, Canada); [Andy Armitage](#) (Faculty of Business, Lakehead University)

Smart Grid Cybersecurity: Standards and Technical Countermeasures

[Shahbaz Hussain](#), [Mohammad Meraj](#), [Monir Abughalwa](#) and [Abdullatif Shikfa](#) (Qatar University, Qatar)

A Nonlinear Analytical Modeling of Permanent Magnet Induction Generator Used in Wind Turbines

[Andre Mrad](#) (LIU, Lebanon); [Ziad Noun](#) (Lebanese International University, Lebanon); [Mohamad Arnaout](#) (LIU & Electrical Engineer, Lebanon)

Power Allocation for Mobile Stations in a Femto-Relay Network using Game-Theory

[Abdel Mehzen Ahmad](#), [Omair Faraj](#) and [Ali Saty](#) (Lebanese International University, Lebanon); [Zouhair El-Bazzal](#) (Lebanese International University & School of Engineering, Lebanon); [Ahmad Muhieddine](#) (Lebanese International University, Lebanon)

A Queue-Aware Discrete Scheduling Simulator for Full-Duplex OFDMA Wireless Networks

[Hassan Fawaz](#) (Saint Joseph University of Beirut, Lebanon); [Samer Lahoud](#) (ESIB, Saint-Joseph University of Beirut, Lebanon); [Melhem El Helou](#) (Saint Joseph University of Beirut, Lebanon)

PiMonitor: A Wi-Fi monitoring device based on Raspberry-Pi

[Milad Ghantous](#) (International University of Beirut, Lebanon); [Oussama Tahan](#) (International University of Beirut - Lebanon, Lebanon); [Hussein Jaber](#) and [Zahraa Darwish](#) (LIU, Lebanon)

SIMUPMSAM - An analytical modeling tool for permanent magnet synchronous and asynchronous machines

[Andre Mrad](#) (LIU, Lebanon); [Ziad Noun](#) (Lebanese International University, Lebanon); [Mohamad Arnaout](#) (LIU & Electrical Engineer, Lebanon)

PLC Code-level Vulnerabilities

[Ibrahim Serhan](#) (LIU, Lebanon); [Willy Susilo](#) and [Raad Raad](#) (University of Wollongong, Australia); [Mohamad Raad](#) (LIU- Lebanese International University, Lebanon)

Wednesday, July 25th, 2018, 16:00 - 16:30

Coffee Break

Wednesday, July 25th, 2018, 16:30 - 18:30

Session 3: e-Commerce, eEducation & Games

Room: Ruby

Chairs: Mohammad Abou Ali (Lebanese International University, Lebanon),
Mohamad A. Aoude (Lebanese University, Lebanon)

E-MANAGEMENT: Obstacles and Challenges in Egypt

[Samir Abou El-Seoud](#) (The British University in Egypt (BUE), Egypt); [Islam A. T. F. Taj-Eddin](#) (Assiut University, Egypt)

Unsupervised Technique for Anomaly Detection in Qatar Stock Market

[Haya Al-Thani](#), [Hanadi Hassen Mohammed](#) and [Somaya Ali Al-maadeed](#) (Qatar University, Qatar); [Noora H Fetais](#) (KINDI Center for Computing Research - Qatar University, Qatar); [Ali Jaoua](#) (Qatar University & College of Engineering, Qatar)

Faheem: a Tablet-Based Application to Improve Receptive Language for Arab Autistic Children

[Saleh M. Alhazbi](#), [Amr Aboeleneen](#), [Naheel Kamal](#), [Mohammad Khader](#), [Adel Azzouza](#), [Ayman Al-Kababji](#), [Abdulahi Hassen](#) and [Ahmad Zaza](#) (Qatar University, Qatar)

Using Semantic Web Technology and Data Mining for Personalized Recommender System to Online Shopping

[Shereen Morsi](#), [Rana Ibrahim](#) and [Nermeen Mekawie](#) (Arab Academy for Science, Technology & Maritime Transport, Egypt)

Sesion 4: Bioinformatics & Biomedical Systems

Room: Saphir 1

Chairs: Ahmad Diab (Lebanese University- EDST, Lebanon),
Mohamad Hajj-Hassan (Lebanese International University, Lebanon)

Skin Cancer Segmentation with Entropy PAL MCET using Gaussian Distribution

[Ali El-Zaart](#) (Beirut Arab University, Lebanon); [Nancy Zreika](#) (Beirut Arab University, Lebanon); [Toufic El Arwadi](#) (BAU, Lebanon); [Abdallah El Chakik](#) (Beirut Arab University, Lebanon)

Prototype Advancement of the Robotic IV Pole: Preliminary Simulation

[George J. El Hajj-Moussa](#), [Abbas Sayed-Kassem](#) and [Nancy Kozah](#) (Lebanese International University, Lebanon); [Reem Harb](#) (Medconsul Company, Lebanon); [Mohamad Arnaout](#) (LIU & Electrical Engineer, Lebanon); [Amira J. Zaylaa](#) (Lebanese International University)

A Virtual Reality Assisted Rehabilitation System for Physical Therapy

[Samar Bayan](#) (LIU, Lebanese International University, Lebanon); [Marwa Yassin](#) (LIU, Lebanon); [Lara Hamawy](#) (LIU, Lebanese International University, Lebanon); [Mohamad Raad](#) (LIU- Lebanese International University, Lebanon); [Ali Cherry](#) (LIU, Lebanese International University, Lebanon)

Cybersecurity Issues in Implanted Medical Devices

[Aliya Tabassum](#) (Qatar University, Qatar); [Zeinab Safi](#) (Qatar University & KINDI Center for Computing Research, Qatar); [Wadha AlKhater](#) and [Abdullatif Shikfa](#) (Qatar University, Qatar)

Time-Frequency Domain for BCG Analysis

[Ali Moukadem](#), [Alain Dieterlen](#), [Laurence Schacher](#), [Dominique Adolphe](#), [Azzeddine Finnaoui](#) and [Houssem Gassara](#) (University of Haute Alsace, France)

Implementation of Vital-Radio System Using NI Transceivers

[Hussein Hijazi](#) (Lebanese International University (LIU), Lebanon); [Ali Chamas Al Ghouwayel](#) (Lebanese International University, Lebanon); [Ali Bazzi](#) (Lebanese International University & LIU, Lebanon); [Majed Saad](#), [Wassim Kabbout](#) and [Hamza Issa](#) (Lebanese International University, Lebanon)

Semi-Automated Self-Monitored Syringe Infusion Pump

[Mohammad Abou Ali](#) (Lebanese International University & President Elias Hrawi Governmental Hospital, Lebanon); [Hasnaa Elkhechen](#) (Lebanese International University, Lebanon); [Ibrahim Deni](#), [Alaa Baalbaky](#) and [Mohamad Dib](#) (Author, Lebanon); [Lara Hamawy](#) (LIU, Lebanese International University, Lebanon)

Session 5: Communication Systems

Room: Saphir 2

Chair: Professor Hamid Mcheick (University of Quebec at Chicoutimi, Canada)

Assessment of Multipath TCP (MPTCP) Protocol on Lebanese Access Networks

[Ammar El Falou](#) (Lebanese International University (LIU), Lebanon); [Salah El Falou](#) (Lebanese University, Lebanon)

Evolutionary Perspective of Mobile Communication Technologies

[Heba Fadhil](#) (University of Baghdad/ iraq, Iraq); [Zinah Dawood](#) (Assistant Lecturer, Iraq)

IIP2 Improvement by Radiated LO-to-RF Leakage Mitigation in Radio Receivers for Low Power Wireless Communication Systems

[Bassem Fahs](#) (Rensselaer Polytechnic Institute, USA); [Philippe Barre](#) (Thales Air Systems, France); [Patrice Gamand](#) (Labex Sigma-Lim, University of Limoges, France); [Adnan Harb](#) (International University of Beirut, Lebanon)

Data Forwarding using Dynamic Chains in VANETs

[Hanan Idriss](#), [Aly Mouallem](#) and [Abdel Mehsen Ahmad](#) (Lebanese International University, Lebanon); [Zouhair El-Bazzal](#) (Lebanese International University & School of Engineering, Lebanon); [Ahmad Muhieddine](#) (Lebanese International University, Lebanon)

Improved Localization for Android Smartphones Based On Integration of Raw GNSS Measurements and IMU Sensors

[Bassem Sheta](#) (MTC, Egypt); [Mohamed Abdeazeem](#) (Arab Academy for Science, Technology and Maritime Transport, Egypt); [Ahmed Kamel](#) (MTC, Egypt); [Ahmed Sheta](#) (Arab Academy for Science and Technology, Egypt)

Pruning Generalized Hypercube Interconnection Networks For Diameter Preservation: RedCube

[Omar Karam](#) (The British University in Egypt, Egypt)

Rabin Public-Key Cryptosystem in the Domain of Gaussian Integers

[Yahia Awad](#) (Lebanese International University, Lebanon)

Gala Dinner (By Invitation Only): 19:00 - 21:00 Room: Emerald

Thursday, July 26, 2018

Welcome and opening 09:00

Thursday, July 26, 2018, 09:15 - 10:00

Keynote Speaker: Professor Rola Naja

5G Networks for Massive IoT

Room: Emerald

Chair: Professor Mohamad Khalil (Lebanese University & Doctoral School of Sciences and Technology, Lebanon)

Thursday, July 26, 2018, 10:00 - 10:30

Coffee Break

Thursday, July 26, 2018, 10:30 - 11:15

Keynote Speaker: **Mr. Ali Saleh** (Senior Vice President & Chief Commercial Officer, MENAT/SSA GE Digital)

Digital Industrial Transformation Journey

Room: Emerald

Chairs: Professor Atef Harb (Notre Dame University, Lebanon)

Dr. Ammar El Falou (Lebanese International University (LIU), Lebanon),

Thursday, July 26, 11:15 - 12:30

Session 6: ULF Session

Room: Ruby

Chair: Prof. Rola Naja (Lebanese University, Prism Lab-Versailles, Lebanon)

Multi-sensory Assistive Living System for Elderly In-home Staying

[Mohamad Daher](#) (ULF and Lille University, Lebanon); [Ahmad Diab](#) (Lebanese University- EDST, Lebanon); [Maan El Badaoui El Najjar](#) (Université des Sciences et Technologies de Lille, France); [Mohamad Khalil](#) (Lebanese University & Doctoral School of Sciences and Technology, Lebanon); [Francois Charpillet](#) (Université de Lorraine, France)

Agents Negotiating to Meet the On-Demand Transport Problem

[Anas Malas](#) and [Salah El Falou](#) (Lebanese University, Lebanon); [Mohamad El Falou](#) (University of Technology and Applied Sciences, Lebanon)

Efficiency of new feature selection method based on neural network

[Nicole Challita](#) (Lebanese University, Lebanon); [Mohamad Khalil](#) (Lebanese University & Doctoral School of Sciences and Technology, Lebanon); [Pierre Beausero](#) (Université de Technologie de Troyes, France)

Optimal and Dynamic SDN Controller Placement

[Nadia Mouawad](#) (Lebanese University, Lebanon & University of Versailles, France); [Rola Naja](#) (Lebanese University, Prism Lab-Versailles, Lebanon); [Samir Tohme](#) (University of Versailles, France)

Session 7: Computer Security & Virtual Reality

Room: Saphir 1

Chair: Dr. Zaher Merhi (Lebanese International University, Lebanon)

Image Segmentation For Fingerprint Recognition

[Wassim El Hajj Chehade](#) (Beirut Arab University, Lebanon); [Riham Abdel Kader](#) (BAU, Lebanon); [Rola Kassem](#) and [Ali El Zaart](#) (Beirut Arab University, Lebanon)

Securing the Internet of Things and Wireless Sensor Networks via Machine Learning: A Survey

[Marwa Mamdouh](#), [Mohammed AboBakr](#) and [Ahmed Khattab](#) (Cairo University, Egypt)

A New Approach in Digital Forensics Investigation Process

[Hamid Reza Ahmadi](#) (Faculty of New Sciences and Technologies, University of Tehran, Iran); [Ayman Mourad](#), [Rami Tawil](#) and [Mohamad Baker Awada](#) (Lebanese University, Lebanon)

Creation of Real Blocks for Neural Network using Simulink

[Hassan Jouni](#) (University of Nice Sophia Antipolis, Lebanon); [Adnan Harb](#) (International University of Beirut, Lebanon); [Gilles Jacquemod](#) (University of Nice, France); [Yves Leduc](#) (Polytech Nice-Sophia, Université de Nice & Former TI Fellow, Texas Instruments, France)

Session 8: Image Processing

Room: Saphir 2

Chairs: Louay Abdallah (International University of Beirut, Lebanon),
Mohamad Raad (LIU- Lebanese International University, Lebanon)

Image Segmentation by Fuzzy c-means using Gamma distribution and hybrid distance

[Zeina AlMida](#) (Beirut Arab University, Lebanon); [Ahmad M. Shahin](#) (Lebanese University, Lebanon); [Abdallah El Chakik](#) (Beirut Arab University, Lebanon); [Ali El-Zaart](#) (Beirut Arab University, Lebanon)

Detecting Abnormal Events in University Areas

[Zahraa Kain](#), [Abir Youness](#) and [Ismail El Sayad](#) (Lebanese International University, Lebanon); [Hussein Kassem](#) (Lebanese International University (LIU), Lebanon); [Samih Abdul-Nabi](#) (Lebanese International University, Lebanon)

Abnormality Detection in Eye Fundus Retina

[Laurine Ashame](#) (Arab Academy for Science, Technology and Maritime Transport, Egypt); [Sherin M. Youssef](#) (Arab Academy, Egypt); [Salema Fayed](#) (Arab Academy for Science, Technology and Maritime Transport, Egypt)

Diagnostic Superficial Vein Scanner

[Yehia Ayoub](#), [Sameer Serhal](#), [Baraa Farhat](#), [Ali Ali](#) and [Hassan Nasser](#) (Lebanese International University, Lebanon); [Jason Amatoury](#) (American University of Beirut, Lebanon); [Mohammad Abou Ali](#) (Lebanese International University & President Elias Hrawi Governmental Hospital, Lebanon)

Image Spectrum Segmentation for Lowpass and Highpass Filters

[Ali El-Zaart](#) (Beirut Arab University, Lebanon); [Walaa Jumiawi](#) (Beirut Arab University, Lebanon)

Reduction of speckle noise in SAR images using hybrid combination of Bootstrap filtering and DWT

[Bassel Marhaba](#), [Eng.](#) (Université du Littoral Côte d'Opale, France); [Mourad Zribi](#) (Université du Littoral Côte d Opale, France)

Thursday, July 26, 2018, 12:30 - 14:00

Lunch Break

Rooms: Emerald, Ruby, Saphir 1, Saphir 2

Thursday, July 26, 2018, 14:00 - 16:00

Seminar: National Instruments – ICCA seminar
CompactDAQ and LabVIEW system

Room: Emerald

Thursday, July 26, 2018, 14:00 - 15:00

Tutorial 1

Professor Samy Ghoneimy (British University in Cairo - Egypt)

Room: Saphir 1

Chair: Professor Jihad Mohamad Aljaam (Qatar University, Qatar)

Thursday, July 26, 2018, 15:00 - 16:00

Tutorial 2

Professor Omar Karam (British University in Cairo - Egypt)

Room: Saphir 1

Chair: Professor Jihad Mohamad Aljaam (Qatar University, Qatar)

Thursday, July 26, 2018, 16:00 - 16:30

Coffee Break

Rooms: Emerald, Ruby, Saphir 1, Saphir 2

Thursday, July 26, 2018, 16:30 - 18:30

Session 9: Varieties 1

Room: Ruby

Chairs: Omar Chebaro (Lebanese International University, Lebanon),
Mazen Raad (Lebanese French University, Qatar)

An ICT-Based Higher Education System: Involving Students in the Quality Assurance Process

[Haydar Moussalem](#) (Lebanese International University, Lebanon); [Bassam Hussein](#) (International University of Beirut, Lebanon); [Zaher Merhi](#) and [Amin Haj-Ali](#) (Lebanese International University, Lebanon)

A Mobile System for Historical Manuscripts Capturing, Recognition and Classification

[Somaya Ali Al-maadeed](#), [Mohamad Kadiry](#) and [Mohammad AlShaar](#) (Qatar University, Qatar)

New Operator For Image Edge Detection Based on Finite Difference Method

[Ali Ghosn](#) (Beirut Arab University, Lebanon); [Ali El-Zaart](#) (Beirut Arab University, Lebanon); [Toufic El Arwadi](#) (BAU, Lebanon)

Windmill Climbing Robot

[Khalidoun Hatoom](#) (Rafik Hariri University, Lebanon); [Rami Alkhatib](#) (RHU, Lebanon); [Nael Jaber](#) (Rafik Hariri University, Lebanon); [Maher Sabbah](#) (HCU, Lebanon); [Mohamad O. Diab](#) (Rafik Hariri University & College of Engineering, Lebanon)

Mobile Assistive Technologies for Visual Impaired Users: A Survey

[AbdelGhani Karkar](#) and [Somaya Ali Al-maadeed](#) (Qatar University, Qatar)

Performance Evaluation of Data Communication Protocols of Intelligent Transportation

[Samer Fallouh](#) (USA, USA); [Nizar Al-Houlou](#) (University Detroit Mercy, USA); [Mohamad Abdul-Hak](#) (University of Detroit Mercy, USA)

Session 10: Varieties 2

Room: Saphir 1

Chair: Kassem M. Ahmad (Lebanese International University, Lebanon)

Modeling Family Behavior in Crowd Simulation

[Lubna Eliyan](#), [Osama Halabi](#) and [Mohammed Saleh](#) (Qatar University, Qatar)

Multi-objective Optimization for RRH clustering in Cloud Radio Access Networks

[Hussein Taleb](#) (ESIB, Saint-Joseph University, Lebanon); [Samer Lahoud](#) (ESIB, Saint-Joseph University of Beirut, Lebanon); [Kinda Khawam](#) (Université de Versailles, France); [Melhem El Helou](#) (Saint Joseph University of Beirut, Lebanon); [Steven Martin](#) (Paris-Sud University, France)

Adaptation Of Motion Estimation Algorithms For Real Time Video Sequences

[Sherin Mohamed](#) (Middle East College, Oman); [Yuhanis Yusof](#) (Universiti Utara Malaysia, Malaysia)

Resource Aware Space Mission Routing

[Sameh Ibrahim](#) (American University in Cairo, Egypt); [Ahmed Khattab](#) (Cairo University, Egypt); [Hassanein H. Amer](#) (American University in Cairo (AUC), Egypt); [Mohamed Ibrahim](#) (The American University in Cairo, USA); [Ramez M Daoud](#) (American University in Cairo & KAMA Engineering Office, Egypt)

Online Detection and Location of Soft Faults in Wired-Power Networks

[Mostafa Rizk](#) (Lebanese International University & Lab-STICC, Lebanon); [Hassan Semaan](#), [Hanine El-Cheikh-Ibrahim](#) and [Ziad Noun](#) (Lebanese International University, Lebanon); [Zouhair El-Bazzal](#) (Lebanese International University & School of Engineering, Lebanon)

Proposition of Online UAV-Based Pollutant Detector and Tracker for Narrow-Basin Rivers: a case study on Litani River

[Mostafa Rizk](#) (Lebanese International University & Lab-STICC, Lebanon); [Tarek Naser Al-Deen](#) and [Hassan Diab](#) (Lebanese International University (LIU), Lebanon); [Abdel Mehzen Ahmad](#) (Lebanese International University, Lebanon); [Zouhair El-Bazzal](#) (Lebanese International University & School of Engineering, Lebanon)

A bilingual Scene-to-Speech Mobile based Application

[AbdelGhani Karkar](#) and [Somaya Ali Al-maadeed](#) (Qatar University, Qatar)

Session 11: Software & Hardware Application Systems

Room: Saphir 2

Chairs: Majd Ghareeb (Lebanese International University, Lebanon),
Ali Massoud Haidar (Beirut Arab University, Lebanon)

Affirming Hardware Design Authenticity using Fragile IP Watermarking

[Samar Shukry](#) and [Amr Talaat Abdel-Hamid](#) (German University in Cairo, Egypt); [Mohamed Dessouky](#) (Ain Shams University, Egypt)

Overview of Software Adaptation Techniques; Guide adaptation pattern

[Konan-Marcelin Kouamé](#) (UQAC - University of Quebec at Chicoutimi, Canada); [Hamid Mcheick](#) (University of Quebec at Chicoutimi, Canada)

Cloud, Fog, and Edge Computing: A Software Engineering Perspective

[Moutaz Saleh Saleh](#) (Qatar University, Qatar)

Towards an Understanding of the Causes of Difficulties in Debugging
[Iyad Zayour](#) (Lebanese University, Lebanon); [Constandinos X. Mavromoustakis](#) (University of Nicosia, Cyprus); [Ahmad Rahil](#) (University of Burgundy, Lebanon); [Bilal El-Hajj-Diab](#) (Lebanese International University, Lebanon)

Novel RRAM CMOS Non-Volatile Memory Cells in 130nm Technology
[Hussein Bazzi](#) (Lebanese International University, Lebanon); [Adnan Harb](#) (International University of Beirut, Lebanon); [Hassen Aziza](#) and [Mathieu Moreau](#) (Universite of Aix-Marseille, France)

A Framework for Advancing Change Impact Analysis in Software Development Using Graph Database
[Mahmoud Elnemr](#) (Cairo, Lebanon)

Requirements Elicitation with the Existence of Similar Applications: A Conceptual Framework
[Haya Sammaneh](#) (An-Najah National University, Palestine)

Partial Sampling Operator and Structural Distance Ranking for Multi-Objective GP
[Makoto Ohki](#) (Graduate School of Tottori University, Japan)

PROGRAM UPDATED ON JULY 19, 2018