

المؤتمر السنوي الحادي عشر

للبحوث الطلابية في مجال الحوسبة التطبيقية

11th Annual Undergraduate Research Conference on Applied Computing

#URC2019

"Artificial Intelligence and the Future"



April 17 - 18, 2019 | Zayed University | Dubai, United Arab Emirates

PROGRAM OVERVIEW



Under the Patronage of

Her Excellency Noura bint Mohammed Al Kaabi

Minister of Culture and Knowledge Development
President of Zayed University



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Message from the Conference Chairs

Welcome to the 11th Annual Undergraduate Research Conference on Applied Computing (URC 2019). The objective of this conference is to promote undergraduate research activity at educational institutions across the Arab world, by providing a forum for undergraduate students to present their research projects, share ideas and interact with other young researchers, faculty members, and technology leaders from the region.

This year we have accepted 161 undergraduate research projects that represent 593 authors, who are primarily undergraduate students and their faculty advisors from 18 educational institutions in 6 countries, namely: Egypt, Jordan, Kuwait, Palestine, Saudi Arabia, and the United Arab Emirates. The projects will be presented in several formats: 4 special track presentations, 15 lightning presentations, 13 live demos, and 129 poster presentations. The topics covered reflect the multidisciplinary character and wide spectrum of emerging technologies.

We would like to thank everyone involved in this conference. First and foremost, we thank the students and their faculty advisors for their submissions to this conference – without their research projects this conference wouldn't exist! We also thank the rest of the organizing committee, and members of the technical committee who reviewed student submissions and provided valuable feedback. In addition, we extend our special thanks to the keynote speakers and members of the panel discussion, for taking the time out of their busy schedules to participate in this conference.

We are grateful to our sponsor, Zayed University's Office of Research, for their continued commitment and contributions that help make this conference a reality. We would also like to thank the Ministry of Infrastructure Development and the Youth Council section for their support and for hosting a hackathon at the conference. And, special thanks to Dr. Fatma Taher for her great efforts in securing IEEE as a technical sponsor.

This conference would not have been possible without the great efforts made by the organizing committee, and especially the local arrangements and registration teams who work tirelessly to ensure everything is running smoothly, and for this we extend a heart-felt thank you to Muna Bader, Izzeddin Asad, Marwa AlHarbi, Dr. Huwida Said, Nagarajan Chandrashekar, and Alia Sulaiman. We would also like to thank all the student volunteers from Zayed University.

Finally, we take this opportunity to thank Zayed University for hosting this conference.

We hope you will enjoy the conference and the lovely city of Dubai.



Dr. Hany El Kadi
Dean, College of Tech Innovation
Zayed University, UAE



Dr. Qusay H. Mahmoud
Conference Co-Chair
Univ. of Ontario Institute of Tech, Canada



Dr. May AlTaei
Conference Co-Chair
Zayed University, UAE



Wednesday, April 17

- 8:00am – 9:45am** **Registration**
Continental Breakfast, Posters and Demos Setup
- 10:00am – 10:15am** **Opening Ceremony**
- Welcome Message:** **Prof. Reyadh Almehaideb**
Vice President of Zayed University
- Welcome: Dr. Hany El Kadi**
Dean, College of Technological Innovation
- 10:15am – 10:45am** **Keynote: H.E. Ohoud Shehail**
Director General of Ajman Digital Government
- 10:45am – 10:50am** **Technical Sponsor: Dr. Fatma Taher**
Chair of IEEE UAE Section
- 10:50am – 11:30am** **Panel discussion (Artificial Intelligence and the Future)**
Moderator: Dr. Andrew Marrington (Zayed University)
Members: Eng. Anwaar Al Shimmari (Ministry of Infrastructure Development)
 Mr. Ashley Woodbridge (SAP)
 Ms. AlMaha AlMuhairi (Fresh Fridge Smart Microherb Farm)
- 11:30am – 12:00pm** **Coffee Break**
- 12:00pm – 1:00pm** **Live Demos and Poster Session**
See the detailed program for list of research projects and room numbers
- 1:00pm – 2:30pm** **Lunch**
- 2:30pm – 4:30pm** **Lightning Presentations, Live Demos and Poster Session**
See the detailed program for list of research projects and room numbers

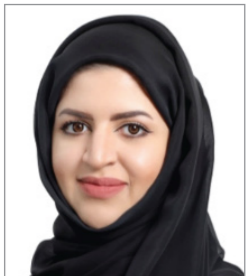
11th ANNUAL
UNDERGRADUATE
RESEARCH CONFERENCE ON
APPLIED COMPUTING

Thursday, April 18

- 8:00am – 9:45am** **Registration**
Continental Breakfast, Posters and Demos Setup
- 10:00am – 10:30am** **Keynote: Ms. Fatma Bazargan**
Cyber Business Leader for Raytheon Emirates
- 10:30am – 11:00am** **Coffee Break**
- 11:00am – 1:00pm** **Live Demos and Poster Session**
See the detailed program for list of research projects and room numbers
- 1:00pm – 2:30pm** **Lunch**
- 2:30pm – 3:30pm** **Live Demos and Poster Session**
See the detailed program for list of research projects and room numbers
- 4:15pm – 5:00pm** **Awards and Closing Remarks**



Keynote Speakers

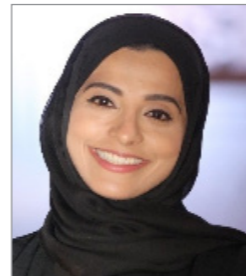


H.E. Ohoud Shehail

H.E. Ohoud Shehail has been a Director General of the Ajman Digital Government since 2017, and has a wealth of practical experience and outstanding academic credentials, as well as active participation in local and regional events and conferences. Under her leadership, Ajman Digital Government have been recognized with one of the most elite local awards, the 'UAE Pioneers' Award. H.E. is also a part of the Emirates Artificial Intelligence Council chaired by the Ministry of Artificial Intelligence, UAE.

Prior to assuming her current position H.E. Ohoud was assigned high profile roles and responsibilities. She was previously the Director of Programs Department of the Sharjah eGovernment. She was also the Director General of the eGovernment of Sharjah. She was also appointed Acting Director of the Ajman eGovernment that is part of the Executive Council of the Emirate.

She has exceptional managerial and strategic capabilities, in addition to leadership, communication, strategic planning, innovation, and more. In 2005, she received her Bachelor of Applied Science (HCT) from the Higher Colleges of Technology (HCT), and in 2011 she obtained a Master's degree in Business Administration from the American University of Sharjah, as well as a number of advanced courses in Leadership and Technology.



Fatma Ahmad Bazargan

Fatma Ahmad Bazargan is Cyber Business Leader for Raytheon Emirates, a wholly owned subsidiary of Raytheon Company, based in Abu Dhabi, United Arab Emirates. Raytheon Company is a technology and innovation leader specializing in defense, civil government and cybersecurity solutions.

Eng. Bazargan leads all cybersecurity efforts for Raytheon Emirates serving the cybersecurity needs of the UAE market. She has more than 15 years of cybersecurity expertise, spanning the areas of operations, governance, risk, compliance, strategy, business development and program management and has deep experience working in both government and semi-government sectors across telecommunications, energy and technology provider.

Before joining Raytheon Emirates, Fatma led the cyber defense function in Injazat Data Systems, a Mubadala Company and helped build the managed security services portfolio. She also led the Information Security Office at her time in Injazat. Prior to Injazat, Fatma helped in the design, built and implementation of the United Arab Emirates Computer Emergency Response Team (aeCERT) and worked on the security master plan for Masdar City.

Fatma holds a master's degree in computer systems security from South Wales University along with additional master's degrees in executive business administration with distinction from Zayed University. She also holds a bachelor's degree in computer engineering, from the American University of Sharjah. Bazargan is a graduate of Carnegie Mellon University's chief information security officer executive program. She holds professional certification of Certified Information Systems Security Professional from ISC2 and is an ISO27001 lead auditor.



Panel Members



Panel Discussion

Artificial Intelligence and the Future

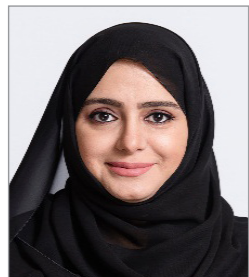
We live in a highly connected world where information and communication technologies or ICT is part of everything that we do. Our bodies, homes, businesses and city infrastructures are equipped with fully connected devices and sensors that generate a large amount of data that can be analyzed using machine learning algorithms for insightful information that can be used to make predictions and decisions. Artificial Intelligence is being used in all kinds of applications from voice search and digital assistants, to self-driving vehicles, to eliminating some human jobs.

This panel will address and discuss the opportunities and challenges for AI in shaping the future. Distinguished members of this panel will explore answers to questions such as: (1) what is AI, and how to leverage the power of AI for socio-economic development, growth, innovation and competitiveness? (2) as we rely more on AI for everything we do, how can we make the ICT infrastructure more resilient? (3) what are the ethical responsibilities of AI researchers and developers? and (4) what role can educational institutions play in fostering AI advancement and awareness, and how to foster collaboration between industry and academia in this exciting field? plus other related questions from the audience.



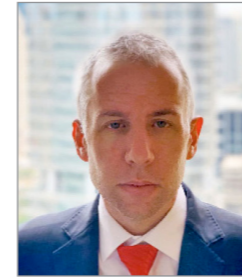
Dr. Andrew Marrington

Dr. Andrew Marrington is an Associate Professor and Associate Dean at the College of Technological Innovation at Zayed University. Dr Marrington received his PhD in Digital Forensics from Queensland University of Technology (QUT), where he studied at the Information Security Institute. Dr Marrington's primary field of research is digital forensics, particularly in automating aspects of the digital forensics process. He is also interested in other aspects of information security. From 2012 to 2015, Dr Marrington served as the College's Graduate Program Director. In Fall 2015 he was appointed as the Acting Associate Dean for Academic Affairs. Prior to working at Zayed University, he worked as a Research Fellow and Project Leader at QUT, as a Software and Systems Engineer at Queensland Rail, and as a private sector IT consultant.



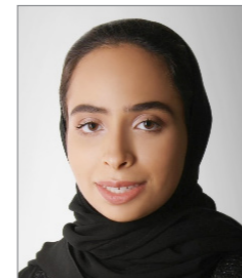
Eng. Anwaar Al Shimmari

Eng. Anwaar Al Shimmari 18 years' multidiscipline experience in Architecture, urban planning, engineering, and infrastructure has put her in a short listed professional expertise in the region. She worked in Abu Dhabi Government, Dubai Holding, and Ministry of Infrastructure Development. She hold a BSc in Architectural Engineering from UAEU and a master degree from AUS in Urban Transportation Planning. She is a professional mentor and technical judge. Anwaar is the Chief Innovation Officer and Director of Design. She is leading the team of artificial intelligence. She is a board member of SZHP. She has Diploma in Government Innovation and Diploma in Executive Leadership. She has been a finalist in H.H. Prime Minister Medals in 2016.



Mr. Ashley Woodbridge

Mr. Ashley Woodbridge is part of the SAP EMEA South Innovation Office and leads SAP's Intelligent Technology program in the Middle East. He is responsible for helping customers adopt and benefit from emerging technologies, like ML and Blockchain through co-innovation projects. Ashley has lived in the Middle East for 12 years, delivering transformational solutions in the areas of Artificial Intelligence, Cloud Computing, Smart City, Cyber Security and Service Providers. Previously to working at SAP, Ashley worked for 9 years with Cisco.



Ms. AIMaha AIMuhairi

Ms. AIMaha AIMuhairi at 22 years of age, is a serial entrepreneur with one successful exit already and four running experiments in cybersecurity, real estate, virtual reality and smart food production. An inventor at heart, AIMaha is applying technology to solve global human challenges while using her business mind to develop the market potential of her solutions.

In 2017, AIMaha received first place in the Think Science Smart Systems category for her FreshFridge Smart Microherb Farm, and is currently a participant in the acclaimed Industrial Revolution-X program for high achieving Emiratis in STEM disciplines.

Currently, AIMaha's focus is to accelerate the development of her FreshFridge concept and is adapting her solution to create a decentralized farming network for Earth as well as Mars, as part of the MARS 2117 UAE Space Mission.

Concurrently, AIMaha is growing two businesses - BlockBase and Layers of Reality MENA. The two companies are closely collaborating with several public and private-sector entities across the UAE to deliver radical innovation and technology solutions. Along with her impressive series of projects, AIMaha is participating in Fab Academy which is a rapid prototyping course at FabLab Dubai, her final project will enable impoverished people an open source farming system and platform to sustain rural communities around the world.

AIMaha graduated from HCT Dubai in May 2018 and, following her studies, she pursues her multiple entrepreneurial endeavors and revolutionary projects full-time.



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