















# **Welcome Message**

On behalf of the organizing committee, we welcome you to The International Arab Conference on Information Technology ACIT'2022, Abu Dhabi, United Arab Emirates.

The International Arab Conference on Information Technology (ACIT'2022) is a forum for scientists, engineers, and practitioners to present their latest research, results, ideas, developments, and applications in all areas of information technology.

ACIT'2022 addresses a wide range of Information Technology, however, this version focuses on the following tracks: (1) Information Technology in Business and Law, (2) Advances in Artificial Intelligence and Machine Learning, (3) Advances in Algorithms, (4) Advances in Software Engineering, (5) Advances in Networking, Communication Systems and Signal Processing, (6) Advances in E-business, E-commerce, and E-marketing, (7) Advances in Language Processing, Computer Vision and Image Processing, and (8) Information technology in Education and E-learning.

The conference program exhibits exciting presentations to contributed papers and state-of-the-art lectures by invited keynote speakers. Tutorials on current issues and special sessions on new trends related to information technology and the software industry could be organized.

The prominence of approaches in these areas is underlined by the topics of the distinguished keynote speakers: Eng. Alexey Myakov, a chief computer vision advocate and a general manager of Intel's newly created AI software R&D center in Dubai, UAE, Prof Mohammed Odeh, KHCC Professor of Cancer Care Informatics, King Hussain Center in Jordan and the University of the West of England, Bristol, UK, and Prof Isam Hasan Zabalawi, a former Minister of Higher Education and Scientific Research. Several tutorial sessions will also be given by Eng Evgenya Stepyreva, Eng Esraa Hijah, Eng Huda AlHeeh, and Eng Esraa al Nashash.

Apart from daily lunches, a Gala dinner is organized on Wednesday evening and a social event is planned on Thursday 24th November 2022.

We hope that you will enjoy your stay in Abu Dhabi

**General Chairs and Local Organizing Committee** 



# **ACIT2022 Tracks**

- Track 1: Information Technology in Business and Law
- Track 2: Advances in Artificial Intelligence and Machine Learning
- **Track 3:** Advances in Algorithms
- Track 4: Advances in Software Engineering
- Track 5: Advances in Networking, Communication Systems and Signal Processing
- Track 6: Advances in E-business, E-commerce, and E-marketing
- Track 7: Advances in Language Processing, Computer Vision and Image Processing
- Track 8: Information technology in Education and E-learning

# **DETAILED PROGRAM**

Tuesday, November 22, 2022			
08:00 - 17:00	Registration		
10:00 - 10:45	Opening Ceremony		
10:45	Exhibition		
10:45 - 11:00	Coffee break		
11:00 - 12:00	<ul> <li>Keynote Speaker: Alexey Myakov</li> <li>Keynote Title: Practical Al</li> <li>Chair: Qutaibah Al Thebyan</li> <li>Al JAWHARA THEATER</li> </ul>		
12:00 - 13:00	<ul> <li>Parallel Session 1: Algorithms (Hall 1)</li> <li>Chair: Hussam Al-Rabai'ah</li> <li>Design of a Software-Defined Multi-Channel Function Generator</li> <li>Quantum-Assisted Genetic Algorithm for Sequencing Compatible Amino Acids in Drug Design</li> <li>Two-Sided Matching Under Incomplete Information</li> <li>An In-Silicon Technique: Prediction of Unknown Protein Structure from Sequences by Homology</li> <li>Simulation Analysis of Pediatric Pes Planus Gait</li> <li>Open-SBS: Smart Building Simulator</li> <li>Parallel Session 2: System Engineering (Hall 2)</li> <li>Chair: Mohammad Alhassan</li> <li>Wireless Power Transfer Using Magnetic Core with Air Gaps</li> <li>Planar Tunable 3rd Order Band Pass Filter for GPS applications</li> <li>On the Design of Low-Power RF Mixers</li> <li>Split Ring Resonator Sensor Design for Real-Time Breathing Monitoring</li> <li>Design and Simulation of a 3-Transistor Active Pixel Sensor Using MATLAB Simulink</li> <li>A Case Study of Implementing Life Cycle Cost Analysis in Sustainability Assessment</li> </ul>		
13:00 - 14:00	Lunch Break		
14:00 – 15:00	<ul> <li>Keynote Speaker: Mohammed Odeh</li> <li>Keynote Title: The Evolution of Cancer Care into Reflectively Learning Systems of Systems: Insights and Challenges</li> <li>Chair: Theyab Taha</li> <li>Al JAWHARA THEATER</li> </ul>		







<ul> <li>Chair: Osama Badawy</li> <li>Learning Local and Global Features for Optimized Multi Label Text Classification</li> <li>A New Metaheuristic Approach Based Feature Selection for Arabic Text Categorization</li> <li>Efficient Arabic Query Auto-Completion for Question Answering at a University</li> <li>Temporal convolution based skip connections for online Arabic handwriting recognition</li> <li>Khadija: An Open Domain Arabic Conversational Agent</li> <li>A Review Study on Arabic Text Classification</li> <li>Plagiarism detection in Arabic documents using word2vector and Arabic WordNet</li> <li>Polarity Classification of Hotel Reviews: Lexicon-Based Method</li> </ul>	15:00 - 15:15	Coffee Break
- Workshop: OpenVINO as AI inference API for multi-vendor HW (AI Jawhara Theater	15:15-17:00	Chair: Osama Badawy  Learning Local and Global Features for Optimized Multi Label Text Classification  A New Metaheuristic Approach Based Feature Selection for Arabic Text Categorization  Efficient Arabic Query Auto-Completion for Question Answering at a University  Temporal convolution based skip connections for online Arabic handwriting recognition  Khadija: An Open Domain Arabic Conversational Agent  A Review Study on Arabic Text Classification  Plagiarism detection in Arabic documents using word2vector and Arabic WordNet  Polarity Classification of Hotel Reviews: Lexicon-Based Method  Parallel Session 4: Software Engineering (Hall 2)  Chair: Zina Houhamdi  Effect of Using Continuous Integration (CI) and Continuous Delivery (CD) Deployment in DevOps to reduce the Gap between Developer and Operation  ADAS Technology Classifications Using a Modified Agile Process  Ranking of bug reports into Findbug categories using BM25 function  Within-Project Software Defect Prediction via an Improved CNN Model  Critical Analytical Insights of Palliative Care Process Modelling in a Regional Cancer Care  Critical Analysis of Palliative Homecare Using the i* Frameworks Strategic and Social Requirements Modelling Applied to a Cancer Care Organization  The Impact of DataOps on Machine Learning in Healthcare  Workshop: OpenVINO as Al inference API for multi-vendor HW (Al Jawhara Theater)





Wednesday, November 23, 2022		
10:00 - 11:00	<ul> <li>Keynote Speaker: Isam Hasan Zabalawi</li> <li>Keynote Title: Higher Education within the Context of Digital Transformation</li> <li>Chair: Mohammed Odeh</li> <li>Al JAWHARA THEATER</li> </ul>	
11:00 - 11:15	Coffee Break	
11:15 - 13:30	Parallel Session 1: ELearning (Hall 1) Chair: Noor Al Deen Al Sheikh  E-Learning Migration Model for Cloud-based Education Challenges and Strategies for Online Learning: A Rapid Evaluation of Transitioning from Face-to-Face Learning to Online Learning during the COVID-19 Pandemic from the Perspective of Al al-Bayt University Faculty Members Cloud ubiquitous learning approach based on multi-agents system Using Microsoft Teams for Teaching the Arabic language The Influence of E-learningon the Student Performance Moderating Role of Institutional Support Means to support the ends: Forums that escape the official gaze in the educational institutions The Attitudes of Al Ain University Students to the Challenges of Distance Education during the COVID-19 Pandemic Smart Assistive 3D tool to remedy children's Learning Difficulties for Distance Education Parallel Session 2: IT & Society (Hall 2) Chair: Qasim Radaydeh Arabized Smart Applications and its Impact on Reducing Energy Consumption in the Residential Area News Media Use and Political Participation in the Middle East: Jordan as an example Multi-Objectives Al-based Optimization Model for Microplastic-free Water Bottles A review of an Indoor Social Media Contribution to Violence Against Women in MENA: A Pilot Study Among University Students Exploring the Effect of Social Media Marketing and Destination Image on Destination Loyalty in Covid-19 Times: Sequential Mediating Role of Brand Love and Brand Loyalty Information Privacy Protection during Remote Trials The Electronic Monitoring in the criminal justice system Parallel Session 3: Business & Law (Hall 3) Chair: Moustafa Kandeel Sustainability through open data sharing and reuse in the digital economy Key Factors Influencing Consumers' Behavioral Intention towards Adopting and Using Mobile Commerce Services Amid and Post COVID-19 Pandemic Business Analytics and Competitive Advantage for SMEs in UAE: A Mediating Role of Technology Assets Analysis of Customer Behavior on E-Commerce During Covid-19 Consumer Protecti	







13:30 - 14:00	Prayer and Lunch Break
	- Parallel Session 1: ELearning (Hall 1)
	Chair: Bayan Abu Shawar
	<ul> <li>The Impact of Implementing ICT to Address Misconceptions about Vector Quantities in the UAE</li> </ul>
	Faculty Perceptions of Blackboard Learn as the Main Platform for Teaching and Learning
	<ul> <li>Influences of Technology Integration Education on Professors' and Students' Perceptions in the UAE Universities</li> </ul>
	An Enriched e-Learning Model to Teach Kids in Arab Countries How to Write Code
	<ul> <li>The Effects of Information Technology on The Educational Sector in The United Arab Emirates</li> </ul>
	<ul> <li>Information Technology Courses and their Adequacy for Graduates of Digital Media Programs in Arab Universities</li> </ul>
	Perspectives On E-Learning in Universities of the Arab Countries
	Pre-service Mathematics Teachers' Perspectives on STEM Education
	Parallel Session 2: IT & Society(Hall 2)
	Chair: Issam Alazoni
14:00 – 15:15	<ul> <li>Legal Basis of Civil Liability for applications of artificial intelligence (particularly robotics)         According to the UAE Civil Transactions Law     </li> </ul>
	The Legal basis of the right to explanation for artificial intelligence decisions in UAE Law
	The Impact of Information and Communication Technologies on Journalism in The Digital Ara A Descriptive and Critical Approach
	<ul> <li>Artificial Intelligence in Sustaining Internal Communication in Corporate Sector: The Mediation of Two-way Communication Perspective of PR</li> </ul>
	<ul> <li>Factors Influencing Employees Trust in AI and its Adoption at Work Evidence from United Arab Emirates</li> </ul>
	<ul> <li>Always-on A quantitative assessment of higher education institutions activities on Facebook</li> </ul>
	The Past Present and Future of Robotic Systems in Automotive Applications
	The Crime of Electronic Blackmail in the Emirati Law
	- Parallel Session 3: Artificial Intelligence(Hall 3)
	Chair: Mohammed Daoud
	<ul> <li>Design and development of an IoT-based solar powered camouflaged robot for military applications</li> </ul>
	<ul> <li>Multiple Sclerosis Biomarkers Detection by a BiLSTM Deep Learning Model for miRNA Data Analysis</li> </ul>
	Design and Modeling of a Walking Robot: A Human Factor Analysis
	Detection of Covid-19 Virus using Supervised Machine Learning Algorithms
	Examining Digital Forensic Evidence for Android Applications
	Steering Committee Meeting
15:15-15:30	Coffee Break

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# **ACIT CONFERENCE 2022**

15:30-17:00	Parallel Session 1: Artificial Intelligence (Hall 1) Chair: Yazeed Ghadi A prediction approach for the functional effects of non-coding gene variants Methodology to Evaluate the Performance of Hadoop Map Reduce on a Hyper-V Cluster using SAN Storage The Emerging Engineering Applications of Artificial Neural Networks: A Visionary Study Pancreatic Tumor Detection by Convolutional Neural Networks Overcoming limitations of statistical methods with artificial neural networks Numeric Big Data Analytics for Successful Decision Making: A Case Study from the Retail Industry in Canada Parallel Session 2: Security (Hall 2) Chair: Sahel Alaouneh Blockchain technology for Secure Shared Medical Data Secure E-health Framework in cloud-based Environment Trust in Adoption of Internet of Things: Role of Perceived Ease of Use And Security Analyzing DevOps Principles and Best Practices Based on Practical View Discovering Authorization Business Rules Toward Detecting Web Applications Logic Flaws A proposed framework for Early Detection IoT Botnet An effective personal identification system using hand dorsal modality and deep learning approach Current Trends in Internet of Things Forensics Parallel Session 3: Networking (Hall 3) Chair: Muath Al Hassan Opportunistic Multi-cast Routing for Improved Multimedia Delivery in Emerging Wireless Networks Network-based Intrusion Detection Datasets: A Survey Paper Peer to Peer Real-Time Mobile Payment Scheme A classifier to Detect Stream Applications (Skype Vs. Zoom) Based on Network Traffic Statistical Metrics Insiders Detection in the uncertain IoD using Fuzzy Logic Proactive Charging Mechanism for Wireless Rechargeable Sensor Networks
19:00	Gala Dinner







	Thursday, November 24, 2022
09:30 - 10:30	- Panel: Emerging technologies and smart cities Hythem Bany Salamah Hashem Almansoori Ghazi Albakri Al JAWHARA THEATER
10:30 - 10:45	Coffee Break
10:45 - 11:45	Parallel Session 1: ELearning
11:45-12:00	Break



# **ACIT CONFERENCE 2022**

12:00-13:00	<ul> <li>Parallel Session 1: Artificial Intelligence</li></ul>
	Evolution and Narrow Band Internet of Things Over Intelligent Transportation System (ITS)
13:00 - 14:00	Lunch Break and Closing
14:00	Trip







# **ACIT 2022 Keynote Speakers**

#### ALEXEY MYAKOV



#### **SPEECH TITLE: Practical AI**

Alexey is a chief computer vision advocate and a general manager of Intel's newly created AI software R&D center in Dubai, UAE. He joined Intel in 2016 through the acquisition of the computer vision company Itseez (the main developer of de facto standard in computer vision — OpenCV) where he was a co-founder and a CEO. At Intel, Alexey focuses on the democratization of deep learning (DL), AI, and computer vision and leads business development and customer enablement for Intel's GetiTM and OpenVINOTM products for AI DL/AI model creation and inference/deployment.

From 2006 to 2013, he served as Vice President of Business Development at MERA (now Orion Innovation), where he led business development, sales, and marketing.

Previously, Alexey founded and served as CEO of 3 biomedical startups. A physicist and biomedical engineer by training he spent his early years as a scientist on early cancer diagnostics and contributed to the development of OCT (Optical Coherence Tomography) modality.

#### MOHAMMED ODEH



SPEECH TITLE: The Evolution of Cancer Care into Reflectively Learning Systems of Systems: Insights and Challenges

Mohammed Odeh is a KHCC Professor of Cancer Care Informatics, at King Hussain Center in Jordan and the University of the West of England, Bristol, UK. Mohammed was the first awardee of the Professorial title in Cancer Care Informatics in 2018. He co-founded with KHCC in Jordan the Cancer Care Informatics initiative and discipline in 2016 aligned with a number of offspring international deliverables including the 1st International Conference on Cancer Care Informatics in 2018, the 1st MSc in Cancer Care Informatics taught and research program jointly run by King Hussein Cancer Center and the University of Jordan, with progression input from the University of West of England, Bristol, UK. Mohammed's first research insights into the utilization of informatics to empower the cancer patient journey date back to 2002 and 2003 through

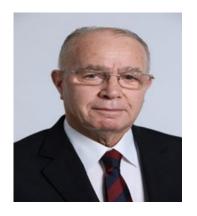
the MammoGrid project and KHCC research through the development of process-modeling methodological approaches to improving cancer care processes, respectively.

He is the research project lead of the iOntoBioInformatics international consortium and is co-founder of the international iOntoBioethics.org research group. Finally, Mohammed is looking forward for 1st international ambassador to be awarded the MSc in Cancer Care Informatics in the next few months and for the forthcoming International Journal on Cancer Care Informatics, as co-founder and also co-editor-in-chief.

### **ACIT CONFERENCE 2022**



#### ISAM HASAN ZABALAWI



SPEECH TITLE: Higher Education within the Context of Digital Transformation

Prof. Isam Zabalawi was born in Amman, Jordan. He holds Ph.D. in Electrical and Electronics Engineering from the Leeds University of England. Prof. Zabalawi was the president of The Arab Academy for Banking & Financial Sciences from 2009 until 2016, he was also the founding President of the International University for Science and Technology (IUST) in Syria from 2005 until 2007. Prof. Zabalawi became the Minister of Higher Education and Scientific Research — in Jordan from 2003 until 2005. He was the Chancellor of the University of Sharjah from 1999-2003.

Prof. Zabalawi was the founding minister for establishing the German-Jordanian University in Jordan. He is a well-published research scholar. He was a research fellow with the German Academy of Exchange (DAAD) at the University of

Karlsruhe, the Technical University of Hamburg, and the University of Erlangen, Germany. He is a member of many technical societies. he was the chairman of the HEREs (Higher Education Reform Experts) with the European Union Program ERASMUS+ in Jordan until Feb 2017. Prof. Zabalawi is a member of the Arab Thought Forum and a member of the World Affairs Council- Jordan.







# **Panel Discussion**

#### PANEL TITLE: EMERGING TECHNOLOGIES AND SMART CITIES

#### HASHEM ALMANSOORI

Mr. Almansoori is an adjunct professor and a consultant in Artificial intelligence /IoT / Augmented Geophysics at General Authority Islamic affairs and endowments. In addition, he is an ex-Executive President of smart AI, IoT, and Augmented Geophysics Projects- Ellite Consortium for Smart City — Egypt, ex-Government Advisor on ICT, and ex-Director General of Electronic Gov. Authority. He received his Ph.D. from the University of East London in information technology.

He got his Master of Science (M.Sc.) with honors in information systems from the University of East London, and another master in computer science from Mississippi State University.

#### **HYTHEM BANY SALAMAH**

Haythem Bany Salameh (Senior Member, IEEE) received the Ph.D. degree in electrical and computer engineering from the University of Arizona, Tucson, AZ, USA, in 2009. He is currently the dean of Scientific Research and Graduate Studies at Al Ain University, Al Ain, United Arab Emirates He also holds a Visiting Professor position with Staffordshire University, Stoke-on-Trent, U.K. His research interests include wireless networking, with emphasis on dynamic spectrum access, cognitive radio networking, the Internet of Things, security, and distributed protocol design. He has served and continues to serve on the technical program committee of many international conferences. He was a recipient of the Jordan Science Research Support Foundation (SRSF) Prestigious Award for Distinguished Research in ICT in 2015, the Best Researcher Award for Scientific Colleges in YU in 2016, and the SRSF Award for Creativity and Technological Scientific Innovation in 2017.

#### GHAZI ALBAKRI

Dr. Ghazi Albakri is one of the first members of the International Council of Systems Engineering (INCOSE) and an IEEE member in the UAE. He has more than 27 years of systems engineering field/active experience and more than 11 years of academic educational experience.

He received his Ph.D. from the George Washington University (GWU) Collage of Engineering in the USA in Systems Engineering and Engineering Management (EMSE), specializing in Systems of Systems Engineering (SOSE) integrations and interoperability. He got his Master of Science (M.Sc.) with honors in Systems Engineering from the John Hopkins University (JUH) Applied Physics Laboratories (APL) School of Engineering in the USA, and a Bachelor's degree in Electrical Engineering from the UAE University. Dr. Albakri lectures various courses at the graduate level in the ADU MEM program, like; Systems Engineering Management, Risk Management for Systems Engineering, Project Management, Advanced Engineering Economy, Project Planning, Integration, and Scope Management.

### **ACIT CONFERENCE 2022**



### **ACIT 2022 Tutorials**

#### **OPENVINO AS AI INFERENCE API FOR MULTI-VENDOR HW**

#### **SPEAKER: ENG EVGENYA STEPYREVA**

Abstract: the aim of this workshop is to illustrate how to use OpenVINO toolkit (Open Visual Inference and Neural network Optimization), which is a free toolkit facilitating the optimization of a deep learning model from a framework and deployment using an inference engine onto Intel hardware. It is an expansive ecosystem of utilities, providing a comprehensive workflow for deep learning solution development.

#### **BUILD AND SHAKE YOUR STRUCTURE!**

#### SPEAKER: ENG ESRAA HIJAH

Abstract: This tutorial aims to introduce students to the basics of structural engineering designs. Participating students will get the required background information about structural designs with consideration to the effects of gravity and lateral loads.

Afterwards, participants will be given certain materials and specifications to helpthem build their own structure and testing it against different loading, then observe the most efficient design.

#### ARDUINO WORKSHOP

#### **SPEAKER: ENG HUDA ALHEEH**

Abstract: The Arduino workshop will focus on getting up and running with Arduino quickly, it will help to understand the basic procedures for working with Arduino. We will be introducing many different concepts including working with various types of hardware such as sensors, displays, and general electronics components.

#### PROGRAMMING YOUR ROBOT

#### SPEAKER: ENG ESRAA AL NASHASH

Abstract: With Dash Robot, discover a world of creativity and fun through coding! You will learn the Wonder coding programs, and master their technique. Create your program and build your coding knowledge through hands-on projects that enhance your critical thinking and coding abilities. Program Dash to move around, avoiding obstacles by measuring and planning!







# **ACIT2022 Committees**

#### **HONORARY CHAIR**

• Ghaleb Al Refai, AAU, United Arab Emirates

#### **GENERAL CHAIRS**

- Qutaibah Althebyan, AAU, United Arab Emirates
- Faten F Kharbat, AAU, United Arab Emirates

#### **LOCAL ORGANIZING MEMBERS**

- Mohammad Hattab (Chair), AAU, United Arab Emirates
- Zina Houhamdi, AAU, United Arab Emirates
- Issam Al-Azzoni, AAU, United Arab Emirates
- Bayan Abu Shawar, AAU, United Arab Emirates
- Hussam Al-Rabaiah, AAU, United Arab Emirates
- Mohammad Daoud, AAU, United Arab Emirates
- Saqib Iqbal, AAU, United Arab Emirates
- Muath Al Hasan, AAU, United Arab Emirates
- Yazeed Ghadi, AAU, United Arab Emirates
- Ubaid Ullah, AAU, United Arab Emirates
- Mahmoud Khasawneh, AAU, United Arab Emirates
- Nuha Hamada, AAU, United Arab Emirates
- Afaf Ahmed, AAU, United Arab Emirates
- Lama Mahmoud, AAU, United Arab Emirates
- Musab Hijazi, AAU, United Arab Emirates



# Venue

### Al Ain University – Abu Dhabi Campus

AAU's Abu Dhabi campus is located in Mohammed bin Zayed City. Designed to the highest standards, it is equipped with the latest learning technologies, modern computer labs and free Wi-Fi. Campus facilities include a library, classrooms, the theater and conference room. Recreational facilities are also available in the form of a cafeteria, student lounges, a gym with the latest sports equipment, along with a range of other facilities and services which contribute to making AAU a unique educational environment.





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