Welcome Message

On behalf of the organizing committee, we welcome you to The International Arab Conference on Information Technology ACIT’2021. The conference organized by Department of Information Study, College of Arts and Social Sciences, Sultan Qaboos University, Muscat, Al-khoud. The International Arab Conference on Information Technology (ACIT’2021) is a forum for academics, scientists, students, engineers, and practitioners to present their latest research, results, ideas, developments, and applications in all areas of information technology.

The conference program exhibits exciting presentations to contributed papers and state-of-the-art lectures by invited keynote speaker.

The conference is online with LIVE connection for all delegates from around the world.

LIVE Virtual Presentations.

ACIT’2021 TOPICS

- IoT in Libraries and Information Centers
- AI and Machine Learning in Libraries and Information Centers
- IT in Libraries and Information Centers
- Inventions and innovations in Oman
- Inventions and innovations in Arab Countries
- Digital transformation during COVID
- Digital libraries, COVID19-
- Digital preservation
- Digital literacy
- Digital repositories
- Archival Information Systems
- Libraries and Sustainable Development
- Data science
- Smart applications in Libraries & Archives
- Documents security systems
- Open Access and Open Education
- AI & Expert Systems
- Algorithms & Applications
- Natural Lang. Processing (Arabic)
- Bioinformatics
- Computer Architecture
- Computer Ethics
- Computer Networks
- Computer Graphics
- Computer Simulation
- Decision Support Systems
- Database Systems
- E-Commerce
- E-Learning
- Geographic Information Systems
- Human Computer Interaction
- Information Security
- Information Systems
- Web semantics
- IT & Society
- Machine Learning
- Multimedia & Image Processing
- Neural Networks
- Parallel & Distributed Systems
- Pattern Recognition
- Reliability & Fault Tolerance
- Remote Sensing
- Software Engineering
- Virtual Reality Systems
# DETAILED PROGRAM

**Tuesday, December 21, 2021**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Chair: Prof. Monji Kherallah</th>
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| 10:00 – 10:50 | Opening Ceremony | • Speech of Sultan Qaboos University. (Sultanate of Oman)  
• Speech of the Conference Chair. (Sultanate of Oman)  
• Speech of the Secretary General of Colleges of Computing and Information Society. (Jordan)  
• Speech of the Secretary General of Arab Universities Union. (Jordan) |

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<th>Chair: Prof. Osama Badawy</th>
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<tr>
<td>11:00 – 11:45</td>
<td>Keynote speaker: Dr. Salim Sultan Al-Ruzaqi</td>
<td>D.Sc. Chairman of the Board of Directors Oman Information Technology Society.</td>
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### Session 1
**Artificial Intelligence/Deep Learning**

- State of the Art - Smart Doorbell Systems.
- The Role of Artificial Intelligence Applications in Knowledge Management of Information Organization.
- Stability and Accuracy of Feature Selection Methods on Datasets of Varying Data Complexity.
- A Roadmap for intelligent HVAC control in Vehicle Cabin.

### Session 2
**Artificial Intelligence/Neural Networks**

- Supervised Machine Learning Modelling of Demand for Outpatient Health-Care Services in Kenya using Artificial Neural Networks and Regression Decision Trees.
- A New Approach to Remote Health Monitoring using Augmented Reality with WebRTC and WebXR.
- Heuristic and Meta Dendral Systems: A Review.
- Retention Contracts under Hidden Information.
- Prediction of Electrical Power Consumption in Jordan.
- Breast cancer classification using multi-modal fusion.
- Comparison between Transfer Learning and Data Augmentation on Medical Images Classification.
- Network Intrusion Detection with StackNet: A phi coefficient Based Weak Learner Selection Approach.
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<td>12:00 – 14:00</td>
<td>Session 3</td>
<td>Artificial Intelligence – Machine Learning - Covid-19</td>
<td>Chair: Prof. Mohammad Ayashe</td>
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<td>Detecting Date Palm Diseases Using Convolution Neural Networks.</td>
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<td>Sentiment Associated Terms Detector with Network Analysis of Philippine COVID-19 Online News Articles.</td>
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<td>Machine learning based prediction tool of hospitalization cost.</td>
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<td>Top COVID-19 100 vaccine papers: An Altmetric study.</td>
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<td>14:00 – 14:15</td>
<td>Break</td>
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<td>14:15 – 16:15</td>
<td>Session 4</td>
<td>IT-society</td>
<td>Chair: Prof. Kamla Ali Al Busaidi</td>
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<td>Location-Based Services Protection via Multi-Layered System.</td>
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<td>Predicting Future Citation Counts Using Machine Learning.</td>
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<td>The Impact of Data Protection Laws: Global and MENA Perspectives.</td>
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<td>Information seeking behavior of Members of the Omani Parliament.</td>
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<td>A Study of Factors Influencing eWoM Credibility Among Millennials: A Case Study of Chennai City.</td>
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<td>Credit Cards Theft Using Social Engineering over WhatsApp: A Survey Study.</td>
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<td>Matching Applicants with Positions for Better Allocation of Employees in the Job Market.</td>
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<td>14:15 – 16:15</td>
<td>Session 5</td>
<td>IT-society</td>
<td>Chair: Prof. Naeema Jabur</td>
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<td>T toward The use of telecommunications technology with Technical guarantees.</td>
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<td>The Characteristics of Intellectual Output in the Field of Big Data in Oman from 2010 to 2020 A Bibliometric Study Based on Scopus.</td>
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<td>Adapting Riva to Support Case Strategy Processes and Enable Modeling a Business Process Architecture-driven from Multiple Heterogenetic Sources of Knowledge.</td>
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<td>An Adapted Ontology for a Generalized Riva-Driven Business Process Architecture.</td>
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<td>Towards A Smarter Energy Metering System For A Smarter City: A Regression-Based Model From Users’ Perspective.</td>
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<td>CTAP: Covided-19 Tracking Application.</td>
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<td>Energy consumption clustering using machine learning: K-means approach.</td>
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| 14:15 – 16:15 | Session 6 | - Arabic language investigation in the context of unimodal and multimodal sentiment analysis.  
- Corpus Design for Arabic Language Corpus-based Speech Synthesis.  
- Commonsense Validation for Arabic Sentences Using Deep Learning.  
- Arabic words root extraction using modified.  
- Classify Arabic Text using Vector Space Models.  
- Study to investigate intrusion detection systems trends to counteracts growing cyber-attacks to cyber physical systems.  
| 16:15 – 16:30 | Break     |                                                                        |
| 16:30 – 17:30 | CCIS      | General Committee Meeting                                               |
| Session 7 | The General View of Virtual Learning Environment in Education Sector.  
|          | Teachers’ Training Needs for Digital Education Competences.  
|          | Digital Platforms and its Importance in Enhancing the Educational and Media Role of the National Records and Archives Authority in Oman.  
|          | The Reality of Electronic Distance Learning in the Presence of COVID19 Pandemic from Jordanian Student Perspective.  
|          | Tendencies of Students of the Faculty of Education at Zarqa University towards Distance Learning during Covid19 Pandemic. |
| Session 8 | Alice Adventures in Computing Land: A review.  
|          | The students Behavior Intention using Virtual Reality in Learning Environments.  
|          | The View of Intelligence Technology in Learning Sector.  
|          | Analysis of the technical reality of remote tests from the perspective of learners of higher education.  
|          | Learner Autonomy in the Digital Environment of Omani Higher Education Institutions: Sultan Qaboos University as a Case Study.  
|          | A study on the Implementation of Integrating Online Learning (Full and Blended Forms) and its Quality Assurance in Jordanian Universities. |
|          | Factors Affecting the Use of Electronic Banking Services Provided by Jordanian Commercial Banks from Customers' Point of View. A Case Study: Jordan Ahli Bank in Northern Region/Jordan.  
|          | The Impact of Applying the XBRL on the Quality of Annual Reports of the Firms Listed in Amman Stock Exchange.  
|          | Applying NIST SP 800-161 in Supply Chain Processes Empowered by Artificial Intelligence.  
|          | Investigating the Challenges Facing Composable/ Disaggregated Infrastructure Implementation: A Literature Review.  
|          | The impact of applying cloud accounting on financial fraud at Jordanian companies.  
|          | Decision Support Activate ASE by Developing Tradable Murabaha Sukuk with System to inform Its Real Value. |

**12:00 – 12:30** Break
### Session 10
**E-commerce**

Chair: Prof. Zakaria Azzam

- Reducing Banking Credit Risk in Islamic Banks by using Information Technology Governance COBIT5 - Case Study of Islamic International Arab Bank.
- The Impact of Digital Trade on Jordan's Economic Growth.
- The expected effects of using e-business technology in information and communication technology to develop and improve the efficiency of education and business management.
- Relationship Development Process in eCommerce Websites.
- The Impact of Drone Technology on The Accounting Profession: The Case of Revenue Recognition in Long-Term Construction Contracts.
- Products Scheduling in Reconfigurable Manufacturing System Considering the Responsiveness Index.

### Session 11
**Image Processing / GIS**

Chair: Dr. Jamal Al-Salmi

- Band Reduction and Segmentation of Hyperspectral Satellite Image Using Rkm Techniques.
- Identifying Diabetics by Retinal Image Classification Using ROI.
- Parallel Dynamic Multi-objective Optimization Evolutionary Algorithm.
- Context-Based Text Completion System for Amharic Language.
- Improved LBP based Descriptors in Harsh Illumination Variations For Face Recognition.

### Session 12
**Machine Learning / Algorithm**

Chair: Prof. Gasm Elseed Ibrahim

- Synthetic Data Generation for Machine Learning.
- An Efficient System to Predict Customers’ Satisfaction on Touristic Services Using ML and DL Approaches.
- An Ensemble Classification Approach using Improvised Attribute Selection.
- A new hybrid approach of gravitational search algorithm with spiral-shaped mechanism-based RBF neural network.
- Driver Drowsiness Detection by Employing CNN and Dlib.
- Scheduling UET-UCT dags of Depth Two on Two Processors.

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<td>Session 10 E-commerce</td>
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<td>14:30 – 15:00</td>
<td>Break</td>
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<td>15:00 – 17:00</td>
<td>Steering Committee Meeting</td>
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| 10:00 – 12:00 | Session 13 | Chair: Prof. Mohammed Odeh | - An Empirical Study of Evaluating the Correlation between Class Stability and Bad Smells.  
- Model Based Approach for Automotive Embedded Systems.  
- Internet of Things Protection and Encryption: A Survey.  
- Internet of Robotic Things: Current Technologies and Applications.  
- Blockchain-Based Model for Pakistan: Land Management System(LMS).  
- A Website Application for IoT Devices Management.  
- Cybersecurity Awareness and Its Impact on Protecting Children in Cyberspace.  
| 12:00 – 12:30 | Break |            |                                                                      |
| 12:30 – 14:00 | Session 14 | Chair: Dr. Arackiasamy | - Improving VANET's performance by incorporated fog-cloud layer (FCL).  
- Impact of Network Topologies on RPL Performance.  
- Analyzing Data Transfer Rate Movement for Visible Light Communication.  
- NFTs: Applications and Challenges.  
- Towards the design of pre questionnaires to promote information privacy protection awareness.  
| 14:00 – 15:00 | Session 15 | Chair: Dr. Saif Al-Jabri | - Ascendant Hierarchical Clustering for Instance Matching.  
- The Use of Topic Modeling in Mining Customers’ Reviews.  
- A Stable Fault Tolerance Algorithm for Leader Crash in Distributed Honeycomb Networks.  
- Database as a Service (DBaaS) Challenges and Solutions.  
- Relational and NoSQL Databases: The Appropriate Database Model Choice.  
- Simulation study of speed control at congested arms of roundabouts.  
- The Reality of using open source integrated library systems in Omani academic libraries. |
| 15:00 – 16:00 | Closing Ceremony |            |                                                                      |
ACIT 2021 Keynote Speaker

Dr. Salim Alruzaigi

Keynote Title: D.Sc., Salim Sultan Alruzaiqi
Chairman of the Board of Directors, Oman Information Technology Society

Dr. Salim Alruzaiqi, Chairman of the Board of Director – Oman IT Society has great career with vast experience and outstanding record of achievements in Information Communications Technologies field for more than 33 years. He led the implementation of e.oman Strategy as the CEO of the Information Technology Authority (2006-2019). During his tenure at Information Technology Authority Dr Salim was a Member of the supervisory committees for digital transformation in more than 22 government entities, where he played a vital role to drive the success of the digital transformation in the Sultanate.

During his leadership at the Information Technology Authority. Dr Salim led the development of the infrastructure projects such as Oman Digital Identity, Government Cloud, Government Data Center, Government Integration Platform, Internet Payment Gateway and Oman National CERT. Dr Salim led countrywide change management initiative for the e.oman strategy where Community Knowledge Centers, Government employees training and PC initiatives were few initiatives that created countrywide impact for the adoption of digital transformation by citizens. Prior to joining the Information Technology Authority, Dr Salim was the CIO at the Ministry of Foreign Affairs, where he led the digital transformation for the Ministry, which included connecting the Ministry and its embassies around the world with a private network. Dr Salim worked for Oman Diplomatic Corp, as the first Secretary at the Oman Embassy in Washington DC for five years where he gained another set of leadership capability. Dr Salim was a member of the Board of Directors of the Telecommunications Regulatory Authority, National Center for Statistics and Information, Public Authority for Manpower Register, the Executive Main Committee of the University of Oman and the Science and Technology city project, Oman Telecommunications Company (Omantel) and the Oman Mobile Telecommunications Company (Oman Mobile). Dr. Salim Head the Board of Directors of Oman IT Society, which has been tasked to play a vital role to support the public and private Sector to develop the ICT industry in the Country. Dr Salim Al Ruzaiqi received a Doctor of Science Degree in Information Systems and Communications from Robert Morris University of Pittsburgh Pennsylvania, Master of Science in Information Systems Technology from George Washington University of Washington DC and Bachelor of Science in Computer Science and Mathematics from Lindenwood University of St Charles Missouri.
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- Dr. Khalfan Alhijji, Sultan Qaboos University, Oman
- Dr. Ahmed Shehata, Sultan Qaboos University, Oman
- Dr. Elsayed Elsawy, Sultan Qaboos University, Oman
- Dr. Nasser Al-Zeidi, Sultan Qaboos University, Oman
- Dr. Saif Al-Jabri, Sultan Qaboos University, Oman
- Dr. Mohamed Satour, Sultan Qaboos University
- Mr. Hilal Al-Rasheedi, Sultan Qaboos University
- Us. Rabea Albusaidi, Sultan Qaboos University, Oman
- Dr. Mohammad Hassan, Zarqa University, Jordan
- Dr. Yasser AL-Lahham, Zarqa University, Jordan
- Dr. Khalfan Zahran Al Hijji, Sultan Qaboos University, Oman
- Dr. Saif Abdulla Hamood Al-Jabri, Sultan Qaboos University, Oman
- Dr. Nour Eldin Mohamed Elshaiekh, Sultan Qaboos University, Oman
- Dr. Ahmed Maher Khafaga Shehata, Sultan Qaboos University, Oman
- Dr. Elsayed Salah Elsawy, Sultan Qaboos University, Oman
- Dr. Fatem Hamad, Sultan Qaboos University, Oman
- Dr. Amjed Al. Thuhli, Ministry of Transport, Communication and IT, Oman
- Dr. Noor Saleh Abutayeh, Zarqa University, Jordan
- Dr. Aiman Moya Said, University of Nizwa
- Dr. Yaser A. M. AL-Lahham, Zarqa University - Jordan
- Dr. Boumedeyn Shannaq, University of Buraimi, Oman
- Dr. Lazhar Khrij, Sultan Qaboos University, Oman, ECE Department
- Dr. Ramkumar Lakshminarayanan, University of Technology and Applied Sciences, Sur, Oman
- Us. Khalsa Abdullah Al-Barashdi, Sultan Qaboos University, Oman

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- Yaser AL-Lahham, Zarqa University, Jordan
- Essam Al Daoud, Zarqa University, Jordan
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- Osama Badawy, Arab Academy for Science, Technology and Maritime Transport, Egypt
- Thiab Taha, University of Georgia, USA
- Ayman Adel, Arab Academy for Science, Technology and Maritime Transport, Egypt
Sultan Qaboos University is the realization of the promise announced by His Majesty Sultan Qaboos BinSaid during the 10th anniversary of Oman’s National Day in 1980. Construction started in 1982 and the first Sultan Qaboos University students were enrolled in 1986. In accordance with the Royal Directives of His Majesty, The University commenced with five colleges; namely Medicine, Engineering, Agriculture, Education and Science. Furthermore, the College of Arts was established in 1987, following the College of Commerce and Economics, which was developed in 1993. The College of Law joined the University in 2006 and finally the College of Nursing was established in 2008. The design and construction of the campus was carried out with great attention to the fulfillment of these objectives, with the overall appearance of the buildings carefully planned to accommodate the physical, intellectual, and spiritual needs of students, faculty and staff. Set in a valley beneath the stark panorama of the nearby foothills of the Oman Mountains, the University is a tasteful array of buildings designed with arches and courtyards and constructed in white and pink sandstone in a manner that reflects traditional Omani and Islamic architecture. The University was constructed on an axis in the valley with one end aligned toward Mecca. This axis line starts at the gates of entrance to the University, runs through the Administration Building with its massive Omani doors, and extends uninterrupted through the middle of the academic buildings to the University Mosque at the western end of the campus. The Mosque, with its large dome and minarets, is situated on the higher ground of the campus, and is visible from many points within and around the University.

During the design period, the University landscaping was carefully considered and the original plantings have since become verdant gardens and flower beds. The plantings include species, native to Oman and other Gulf regions, that grow and flourish in an arid environment. The landscaping provides shade from the sun, shelter against the wind, and splendid display of color from flowers and foliage throughout the year. The traditional Islamic separation of the genders is maintained in the architecture of the University. There is separate access to buildings through lower and upper walkways for men, women, and separate seating in the classrooms. Altogether, the campus portrays the rich heritage of Oman and Islam while incorporating all the efficiencies of modern life. The result is an educational and living environment, which is both functional and attractive.
THE INTERNATIONAL ARAB CONFERENCE ON INFORMATION TECHNOLOGY
ACIT 2021

21th – 23th, December 2021, Sultanate of Oman
College of Arts and Social Sciences
Department of Information Study

All times in (GMT+4), Oman Time Zone

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