









## قسم دراسات المعلومات Department of Information Studies

Under the Patronage of HH Sayyid Dr. Fahad Bin Al Julanda Al Said The Vice Chancellor of Sultan Qaboos University



Dr. Nabhan Al-Harrasi

**General Chair** 

Dr. Nour Eldin Elshaiekh

**The Conference Chair** 

Dean College of Arts and Social Sciences Department of Information Study Sultan Qaboos University

Sultan Qaboos University

# المؤتمر العربي الدولي لتكنولوجيا المعلومات

The International Arab Conference on Information Technology

> ۲۳ - ۲۲ دیسمبر ۲۰۲۱ 21 - 23 December 2021

كلية الآداب والعلوم الاجتماعية, جامعة السلطان قابوس، سلطنة عُمان College of Arts and Social Sciences, Sultan Qaboos University Muscat, Sultanate of Oman

# 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
- Al 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

ACIT'2021

		Tuesday, December 21,2021		
12:00 – 14:00	Session 3  Artificial Intelligence – Machine Learning- Covid-19	<ul> <li>Detecting Date Palm Diseases Using Convolution Neural Networks.</li> <li>Management of COVID-19 Impact with Artificial Intelligent Humanoids.</li> <li>Machine learning based prediction tool of hospitalization cost.</li> <li>Intrusion Detection System Based Machine Learning Methods: A Comprehensive Survey for Security and Deep Learning Applications.</li> <li>Top COVID-19 100 vaccine papers: An Altmetric study.</li> <li>Comparing Traditional Machine Learning Methods for COVID-19 Fake News Detection.</li> <li>Redefining Knowledge Management in the Era of COVID -19 A Concept Analysis Approach in the Context of Higher Education.</li> </ul>		
14:00 – 14:15	Break			
14.00 14.13	Dicar	Chair: Prof. Kamla Ali Al Busaidi		
	Session 4  IT-society	<ul> <li>Location-Based Services Protection via Multi-Layered System.</li> <li>Predicting Future Citation Counts Using Machine Learning.</li> <li>The Impact of Data Protection Laws: Global and MENA Perspectives.</li> <li>Information seeking behavior of Members of the Omani Parliament.</li> <li>A Study of Factors Influencing eWoM Credibility Among Millennials: A Case Study of Chennai City.</li> <li>Credit Cards Theft Using Social Engineering over WhatsApp: A Survey Study.</li> <li>Matching Applicants with Positions for Better Allocation of Employees in the Job Market.</li> </ul>		
14:15 – 16:15	Session 5  IT-society	<ul> <li>Toward The use of telecommunications technology with Technical guarantees.</li> <li>The Characteristics of Intellectual Output in the Field of Big Data in Oman from 2010 to 2020 A Bibliometric Study Based on Scopus.</li> <li>Adapting Riva to Support Case Strategy Processes and Enable Modeling a Business Process Architecture-driven from Multiple Heterogenetic Sources of Knowledge.</li> <li>An Adapted Ontology for a Generalized Riva-Driven Business Process Architecture.</li> <li>Enhancing Flood Prediction using Ensemble and Deep Learning Techniques: A Case of Developing Countries.</li> <li>Towards A Smarter Energy Metering System For A Smarter City: A Regression-Based Model From Users' Perspective.</li> <li>CTAP: Covied-19 Tracking Application.</li> <li>Energy consumption clustering using machine learning: K-means approach.</li> </ul>		



Tuesday, December 21,2021				
14:15 – 16:15	Session 6 Arabic Language /IT	<ul> <li>Chair: Dr. Khalfan Zahran Al Hiji</li> <li>Arabic language investigation in the context of unimodal and multimodal sentiment analysis.</li> <li>Commonsense Validation for Arabic Sentences Using Deep Learning.</li> <li>Arabic words root extraction using modified.</li> <li>Classify Arabic Text using Vector Space Models.</li> <li>Arabic Text Classification: A Review Study on Feature Selection Methods.</li> <li>Study to investigate intrusion detection systems trends to counteracts growing cyber-attacks to cyber physical systems.</li> <li>Abu Dhabi Universities Response to COVID-19 via Facebook Posts.</li> </ul>		
16:15 – 16:30	Break			
16:30 – 17:30	CCIS General Committee Meeting			

Session 7  E-Learning/ E-Learning in COVID	<ul> <li>Chair: Prof. Mohammad M. Al-Haj</li> <li>The General View of Virtual Learning Environment in Education Sector.</li> <li>Teachers' Training Needs for Digital Education Competences.</li> <li>Digital Platforms and its Importance in Enhancing the Educational and Media Role of the National Records and Archives Authority in Oman.</li> <li>DiscimusRW: An E-Learning Web Application for Classifying Random Walks with Machine Learning.</li> <li>An Investigation Of E-learning Websites Usability Issues during the COVID-19 Pandemic: Jordan Case Study.</li> </ul>
	<ul> <li>The Reality of Electronic Distance Learning in the Presence of COVID19 Pandemic from Jordanian Student Perspective.</li> <li>Tendencies of Students of the Faculty of Education at Zarqa University towards Distance Learning during Covid19 Pandemic.</li> </ul>
 Session 8  E-Learning	<ul> <li>Chair: Prof. Zuhoor Al-Khanjari</li> <li>Alice Adventures in Computing Land: A review.</li> <li>The students Behavior Intention using Virtual Reality in Learning Environments.</li> <li>The View of Intelligence Technology in Learning Sector.</li> <li>Comparison and Enhancement of VR Water Cycle Guide Applications.</li> <li>CASL: Classical, Synchronous, Asynchronous Learning. Towards a Universal Hybrid Model for E-learning in Jordan Universities.</li> <li>Analysis of the technical reality of remote tests from the perspective of learners of higher education.</li> <li>Learner Autonomy in the Digital Environment of Omani Higher Education Institutions: Sultan Qaboos University as a Case Study.</li> <li>A study on the Implementation of Integrating Online Learning (Full and Blended Forms) and its Quality Assurance in Jordanian Universities.</li> </ul>
Session 9  E-commerce & SE-IT Society  Break	<ul> <li>Chair: Prof. Hany Harb</li> <li>Investigating the Students' Perceptions Regarding Electronic Library Usage during Covid-19- A Cross-Sectional Study.</li> <li>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</li> <li>The Impact of Applying the XBRL on the Quality of Annual Reports of the Firms Listed in Amman Stock Exchange.</li> <li>Assessing the Role of Technologically Enabled Trading System in the Stability of Small and Medium Enterprises: The Case of Jordan.</li> <li>Applying NIST SP 800-161 in Supply Chain Processes Empowered by Artificial Intelligence.</li> <li>Investigating the Challenges Facing Composable/ Disaggregated Infrastructure Implementation: A Literature Review.</li> <li>The impact of applying cloud accounting on financial fraud at Jordanian companies.</li> <li>Decision Support Activate ASE by Developing Tradable Murabaha Sukuk with System to inform Its Real Value.</li> </ul>

Session 10  E-commerce  F-commerce  F-comm	Wednesday, December 22, 2021		
<ul> <li>An Ensemble Classification Approach using Improvised Attribute Selection.</li> <li>Driver Drowsiness Detection by Employing CNN and Dlib.</li> <li>Scheduling UET-UCT dags of Depth Two on Two Processors.</li> </ul>	12:30 – 14:30	Session 10 E-commerce  Session 11 Image Processing / GIS  Session 12 Machine Learning /	<ul> <li>Reducing Banking Credit Risk in Islamic Banks by using Information Technology Governance COBIT5 - Case Study of Islamic International Arab Bank.</li> <li>The Impact of Digital Trade on Jordan's Economic Growth.</li> <li>The expected effects of using e-business technology in information and communication technology to develop and improve the efficiency of education and business management.</li> <li>Relationship Development Process in eCommerce Websites.</li> <li>The effect of electronic Marketing Tools on Customer Satisfaction with Electronic Services in Jordanian Banks (A case study of the Islamic International Arab Bank in Amman City.</li> <li>The Impact of Drone Technology on The Accounting Profession: The Case of Revenue Recognition in Long-Term Construction Contracts.</li> <li>Impact of Marketing Innovation on Building Customer Loyalty: (A Field Study on Customers of Pioneers Paper and Carton Industries in Jordan).</li> <li>Products Scheduling in Reconfigurable Manufacturing System Considering the Responsiveness Index.</li> <li>Chair: Dr.Jamal Al-Salmi</li> <li>Band Reduction and Segmentation of Hyperspectral Satellite Image Using Rkm Techniques.</li> <li>Identifying Diabetics by Retinal Image Classification Using ROI.</li> <li>Parallel Dynamic Multi-objective Optimization Evolutionary Algorithm.</li> <li>Unsupervised Topic Aware Document-Level Semantic Representation for Document Clustering.</li> <li>Educational Lexical Resource Enrichment Using Machine Learning Classifiers.</li> <li>Improved LBP based Descriptors in Harsh Illumination Variations For Face Recognition.</li> </ul> Chair: Prof. Gasm Elseed Ibrahim <ul> <li>Heuristic for the Consecutive block minimization. Algorithms and results.</li> <li>Multilevel Classification of Pakistani News using Machine Learning.</li> <li>Synthetic Data Generation for Machine Learning.</li> <li>An Efficient System to Predict Customers' Satisfaction on</li> </ul>
		_	<ul> <li>Learning.</li> <li>Synthetic Data Generation for Machine Learning.</li> <li>An Efficient System to Predict Customers' Satisfaction on Touristic Services Using ML and DL Approaches.</li> <li>An Ensemble Classification Approach using Improvised Attribute Selection.</li> <li>Driver Drowsiness Detection by Employing CNN and Dlib.</li> </ul>
15.00 17.00 Steering Committee Marting	14:30 – 15:00	Break	
15:00 - 17:00   Steering Committee Meeting	15:00 - 17:00	<b>Steering Committee</b>	Meeting

Thursday, December 23,2021			
		Chair: Prof. Mohammed Odeh	
	Session 13  IoT/ Software Engineering	<ul> <li>An Empirical Study of Evaluating the Correlation between Class Stability and Bad Smells.</li> <li>Model Based Approach for Automotive Embedded Systems.</li> <li>Internet of Things Protection and Encryption: A Survey.</li> <li>Internet of Robotic Things: Current Technologies and Applications.</li> <li>Blockchain-Based Model for Pakistan: Land Management System(LMS).</li> <li>A Website Application for IoT Devices Management.</li> <li>Cybersecurity Awareness and Its Impact on Protecting Children in Cyberspace.</li> <li>Evaluating the Usability of Mobile Applications: The Case of Covid-19 Apps in Saudi Arabia.</li> </ul>	
		Chair: Dr.Arockiasamy	
	Session 14 Information Security/	Improving VANET's performance by incorporated fog-cloud layer (FCL).	
	Networking	<ul> <li>Dynamic Tomato Leaves Disease Detection using Histogram-based K-means Clustering Algorithm with Back-Propagation Neural Network.</li> </ul>	
10:00 – 12:00		<ul> <li>Impact of Network Topologies on RPL Performance.</li> <li>Analyzing Data Transfer Rate Movement for Visible Light Communication.</li> </ul>	
		<ul> <li>NFTs: Applications and Challenges.</li> </ul>	
		<ul> <li>Towards the design of pre questionnaires to promote information privacy protection awareness.</li> <li>Encryption for End-User Privacy: A Cyber-Secure Smart Energy Management System.</li> </ul>	
		Chair: Dr. Saif Al-Jabri	
	Session 15	Ascendant Hierarchical Clustering for Instance Matching.	
	Others	<ul> <li>A Framework for Online Customer Reviews System Using Sentiment Scoring Method.</li> </ul>	
		<ul> <li>The Use of Topic Modeling in Mining Customers' Reviews.</li> <li>A Stable Fault Tolerance Algorithm for Leader Crash in Distributed Honeycomb Networks.</li> </ul>	
		<ul> <li>Database as a Service (DBaaS) Challenges and Solutions.</li> <li>Relational and NoSQL Databases: The Appropriate Database Model Choice.</li> </ul>	
		<ul> <li>Simulation study of speed control at congested arms of roundabouts.</li> </ul>	
		• The Reality of using open source integrated library systems in Omani academic libraries.	
12:00 – 12:30	Break		
12:30 – 14:00	Closing Cerem	ony	

# ACIT 2021 Keynote Speaker

# Dr. Salim Alruzaigi



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

Dr. Salim Alruzaiqi, Chairman of 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, Governmentemployees 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 wasthe 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 fiveyears 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 Linden wood University of St Charles Missouri

# ACIT 2021 Committees

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- Prof. Abdullah Al-Badi, Sultan Qaboos University, Oman
- 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.Jamal Alsalmi, Oman
- Us.Farah Bani Shamseh, Zarqa University, Jordan

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- Dr. Nour Eldin Mohamed Elshaiekh, Sultan Qaboos University, Oman
- Dr. Ahmed Maher Khafaga Shehata, Sultan Qaboos University, Oman
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- Dr. Amjed Al. Thuhli, Ministry of Transport, Communication and IT, Oman
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- Yaser Al-Lahham, Zarga University, Jordan
- Essam Al Daoud, Zarqa University, Jordan
- Mohammad M. Al-Haj Hassan
- Adnan Shaout, Michigan University, USA
- · Samer Samara, Yarmouk University, Jordan
- Ahmad Dalalah Ha'el University, KSA
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- Thiab Taha, University of Georgia, USA
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- Ismail Hmeidi, Jordan University of Science and Technology, Jordan
- Khalid Khanfar, Palestine Technical University Kadoorie, Palestine
- Mohammad Ayash, Islamic University of Lebanon, Lebanon
- Mohammad Al Janeni, Isra University, Jordan
- Qutaibah Al Thyban, Al Ain University, UAE
- Monji Kherallah, Sfax University, Tunisia
- Hany Harb, Misr University For Science And Technology, Egypt

### Venues

### Sultan Qaboos University, Seeb Al Khoudh SQU SEPS Muscat OM, 123



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 Collegeof 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

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

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

