2022 International Arab Conference on Information Technology (ACIT 2022)

Abu Dhabi, United Arab Emirates
22-24 November 2022

IEEE Catalog Number: CFP22Q51-POD
ISBN: 979-8-3503-2025-1

Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22Q51-POD
ISBN (Print-On-Demand):	979-8-3503-2025-1
ISBN (Online):	979-8-3503-2024-4
ISSN:	2831-493X

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings.com

TABLE OF CONTENTS

Arabized Smart Applications and Its Impact on Reducing Energy Consumption in the Residential Area 1
Mazin Arabasy, Areen Alquazu, Rehab Ghoneim

Opportunistic Multi-Cast Routing for Improved Multimedia Delivery in Emerging Wireless Networks 9
Haythem Bany Salameh, Mustafa Ali

Machine Learning Scheme for Managing Virtual Computing Resources in Cloud Market 14
Bashar Igried, Ayoub Alsarhan, Mohammad Alauthman, Ammar Almomani

Using Multinomial Naive Bayes Machine Learning Method to Classify, Detect, and Recognize Programming Language Source Code 19
Ayman Hussien Odeh, Munther Odeh, Nada Odeh

E-Learning Migration Model for Cloud-based Education 24
Omar Dahham, Hamed Fawareh

Learning Local and Global Features for Optimized Multi-Label Text Classification 32
Muhammad Rafi, Fizza Abid

The Past, Present, and Future of Robotic Systems in Automotive Applications 41
Adnan Shaout, Sarah Overbeck

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 47
Saad Bani-Mohammad, Ismail Ababneh

Detection of Covid-19 Virus Using Supervised Machine Learning Algorithms 55
Ahmad T. Al-Taani, Batool Al-Rababaah

ADAS Technology Classifications Using a Modified Agile Process 60
Adnan Shaout, Abdelrahman Shaout, Sadhvi Ajit Varagiri

Fuzzy Logic and Deep Learning Techniques for Covid-19 Detection 67
Belkis Hassani, Khelili Mohamed Akram, Kazar Okba, Slatnia Sihem, Saad Harous, Belkacem Athamena, Zina Houhamdi

Blockchain Technology for Secure Shared Medical Data 76
M'Hamed Mancer, Khelili Mohamed Akram, Ezedin Barka, Kazar Okba, Slatnia Sihem, Saad Harous, Belkacem Athamena, Zina Houhamdi

Secure E-Health Framework in Cloud-Based Environment 82
Monther Tarawneh, Faisal Alzyoud, Yousef Sharrab, Hassan Kanaker

Numeric Big Data Analytics for Successful Decision Making: A Case Study from the Retail Industry in Canada 87
Mahmoud Yousef Askari, Ghaleb A. El Refae

Current Trends in Internet of Things Forensics 94
Nura Shifa Musa, Nada Masood Mirza, Adnan Ali

Simulation Analysis of Pediatric Pes Planus Gait 99
Nada Masood Mirza, Adnan Ali, Rawad Bader, Nura Shifa Musa, Mohamad Ishaq Khairi

Design of a Software-Defined Multi-Channel Function Generator..... 104
Adnan Shaout, Brian Wiec

Convolutional Neural Networks for Semantic Segmentation: A Recent Survey.....110
Abdelrahman Kaseb, Mahmoud Khaled, Omar Galal

Effect of Using Continuous Integration (CI) and Continuous Delivery (CD) Deployment in DevOps to Reduce the Gap Between Developer and Operation 117
Abrar Mohammad Mowad, Hamed Fawareh, Mohammad A. Hassan

Methodology to Evaluate the Performance of Hadoop MapReduce on a Hyper-V Cluster Using SAN Storage..... 125
Feras Al-Hawari, Khaled Tayem, Sahel Alouneh, Anass Al-Ksasbeh

Within-Project Defect Prediction Using Improved CNN Model Via Extracting the Source Code Features 131
Alaa T. Elbosaty, Walid M. Abdelmoez, Essam Elfakharany

Message Broadcasting Algorithm Implementation Using Mobile Long Term Evolution and Narrow Band Internet of Things Over Intelligent Transportation System (ITS) 139
Ghassan Samara, Mohammad Aljaidi, Essam Al Daoud, Maram Y. Al-Safarini, Ghassan M. Alsayyed, Sattam Almatarneh

Internet of Robotic Things in Early Childhood Education: Domains and Challenges 146
Ghassan Samara, Ghassan M. Alsayyed, Mohammad Aljaidi, Sattam Almatarneh, Feras Almashakbah, Firas Omar

Two-Sided Matching Under Incomplete Information..... 153
Zina Houhamdi, Belkacem Athamena, Ghaleb Elrefae

Using Microsoft Teams for Teaching the Arabic Language: Opportunities, Challenges, and Future Actions as Perceived by University Students 159
Omran Ahmad Musleh, Mohammad Hussein Ahmad Faqeeh, Suad Abdulkareem Alwaely, Imad Ibraheem Mostafa, Abdoulaye Kaba

The Influence of E-Iearning, M-learning, and D-learning on the Student Performance: Moderating Role of Institutional Support 168
Mohammed. T. Nuseir, Ahmad Ibrahim Aljumah, Ghaleb A. El Refae

Means to Support the Ends: Forums that Escape the Official Gaze in the Educational Institutions 177
Ahmad Ghandour, Brendon J. Woodford, Alhanof Almutairi, Hussein Salem Al-Srehan

Efficient Arabic Query Auto-Completion for Question Answering at a University 182
Momin Abdelhafez, Ghaydaa Khateeb, Adnan Yahya

Peer to Peer Real-Time Mobile Payment Scheme..... 191
Mahmoud Obaid, Rami Hodrob

An In-Silico Technique: Prediction of Unknown Protein Structure from Sequences by Homology..... 197
Wafa Faisal, Hana Eltayeb, Mohammed Hassan, Nusiba Ibrahim

Smart Assistive 3D Tool to Remedy Children's Learning Difficulties for Distance Education..... 214
Dheya Mustafa, Intisar Ghazi Mustafa, Samah Zriqat, Qutaibah Althebyan

Stellar Objects Classification Using Supervised Machine Learning Techniques 219
Deen Omat, Jood Otey, Amjed Al-Mousa

Consumer Protection from Misleading Online Advertisements “An Analytical Study in UAE Law” 227
Tariq Abdel Rahman Kameel, Moustafa Elmetwaly Kandeel, Mohammad Amin Alkrisheh

Information Privacy Protection During Remote Trials 235
Moustafa Elmetwaly Kandeel, Tariq Abdel Rahman Kameel, Mohammad Amin Alkrisheh

Electronic Monitoring in the Criminal Justice System of the UAE & France 243
Ahmad Ateeq Al Dhaheri, Mohammad Amin Alkrisheh, Moustafa Elmetwaly Kandeel, Tariq Abdel Rahman Kameel

Network-Based Intrusion Detection Datasets: A Survey 250
Lubna Ali Hassan Ahmed, Yahia Abdalla Mohamed Hamad, Ahmed Abdallah Mohamed Ali Abdalla

Cloud Ubiquitous Learning Approach Based on Multi-Agents System 257
Manel Guettala, Samir Bourekkache, Okba Kazar, Saad Harous, Belkacem Athamena, Zina Houhamdi

Cloud Ubiquitous Learning Approach Based on Multi-Agents System 265
Manel Guettala, Saad Harous, Samir Bourekkache, Belkacem Athamena, Okba Kazar, Zina Houhamdi

Open-SBS: Smart Building Simulator 273
Houssem Eddine Degha, Fatima Zohra Laallam, Okba Kazar, Issam Khelfaoui, Belkacem Athamena, Zina Houhamdi

News Media and Political Participation in the Middle East: Jordan as an Example 288
Dina Naser Tahat, Mokhtar Elareshi, Khalaf Tahat, Marcelle A. Al Jwaniat, Mohammed Habes, Abdulkrim Ziani

Design and Development of an IoT-Based Solar Powered Camouflaged Robot for Military Applications 296
Meftah Zouai, Abdelhak Merizig, Ichrak Boudjelkha, Houcine Belouaar, Okba Kazar, Guadalupe Ortiz, Abderrahmane Lakas, Zina Houhamdi

Sustainability Through Open Data Sharing and Reuse in the Digital Economy 302
Ibrahim Niankara

Key Factors Influencing Consumers' Behavioral Intention Towards Adopting and Using Mobile Commerce Services Amid and Post COVID-19 Pandemic 313
Feda'A Al-Tawara, Shatha Salamin, Abdallah Qusef

Ranking of Bug Reports into Findbug Categories Using the BM25 Function 322
Raed Shatnawi

On Developing Deep Learning Models with Particle Swarm Optimization in the Presence of Poisoning Attacks 330
Majdi Maabreh, Omar Darwish, Ola Karajeh, Yahya Tashtoush

Business Analytics and Competitive Advantage for SMEs in UAE: A Mediating Role of Technology Assets 335
Ahmad Ibrahim Aljumah, Mohammed. T. Nuseir, Ghaleb A. El Refae

Deep Learning for Single-Channel EEG-Based Driver Drowsiness: Comparative Study 344
Imene Latreche, Sihem Slatnia, Okba Kazar, Saad Harous, Belkacem Athamena, Zina Houhamdi

The Attitudes of Al Ain University Students to the Challenges of Distance Education During the COVID-19 Pandemic 349
Khawlah M. Al-Tkhayneh, Kholoud Rashid Alnuaimi, Fatima Meteb Al-Takayneh

A Review of Indoor UAV-Based Tracking Systems: Classification, Status, and Challenges 358
Mohannad Alhafnawi, Ala'Eddin Masadeh, Haythem Bany Salameh, Moussa Ayyash, Reyad El-Khazali, Hany Elgala

Trust in Adoption of Internet of Things: Role of Perceived Ease of Use and Security 364
Mohammed. T. Nuseir, Ahmad Ibrahim Aljumah, Ghaleb A. El Refae

Social Media Contribution to Violence Against Women in MENA: A Pilot Study Among University Students 371
Enas Said Abulibdeh, Huda Skaik, Farah Abu Libdeh, Bushra Saleh Abusini

Leveraging Blockchain-Based Smart Contracts in the Management of Supply Chain: Evidence from Carrefour UAE..... 377
Shorouq F. Eletter, Ghaleb A. Elrefae, Tahira Yasmin, Amer Qasim, Abdul Razzak Alshehadeh, Abdelhafid Belarbi

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..... 382
Ahmad Ibrahim Aljumah, Mohammed. T. Nuseir, Ghaleb A. El Refae

Overcoming Limitations of Statistical Methods with Artificial Neural Networks 390
Marko Grebovic, Luka Filipovic, Ivana Katnic, Milica Vukotic, Tomo Popovic

Multiple Sclerosis Biomarkers Detection by a BiLSTM Deep Learning Model for miRNA Data Analysis..... 396
Nehal M. Ali, Mohamed Shaheen, Mai S. Mabrouk, Mohamed Abo Rizka

Temporal Convolution Based Skip Connections for Online Arabic Handwriting Recognition..... 402
Dalila Othmen, Ramzi Zouari, Houcine Boubaker, Monji Kherallah

The Changing World of Sales Skills: from Live to a Mix of Live and Virtual Selling..... 407
Jamil Razmak, Joseph William Pitzel, Wejdan Farhan

Enhanced MobileNet and Transfer Learning for Facial Emotion Recognition 412
Aicha Nouisser, Ramzi Zouari, Monji Kherallah

Legal Basis of Civil Liability for Applications of Artificial Intelligence (Particularly Robotics) According to the UAE Civil Transactions Law..... 417
Ali Hadi Al-Obeidi

The Impact of Information and Communication Technologies on Journalism in the Digital Era a Descriptive and Critical Approach 422
Mohamed Chettah, Rahima Aissani, Belqis Chettah

A Blind Medical Image Watermarking Using SWT and Arnold Transform..... 429
Imane Assini, Abdelmajid Badri, Aicha Sahel, Abdennaceur Baghdad

The Crime of Electronic Blackmail in the Emirati Law 435
Mohammed Salem Alneyadi, Mohammad Amin Alkrisheh, Nour Alhajaya, Khawlah M. Al-Tkhayneh

Information Technology Courses and Their Adequacy for Graduates of Digital Media Programs in Arab Universities 441
Rahima Aissani, Mohamed Chettah, Haneen Kanaan, Maysaa Wehbe

Expanding DevOps Principles and Best Practices Based on Practical View 449
Muntaha Alawneh, Imad M. Abbadi

Discovering Authorization Business Rules Toward Detecting Web Applications Logic Flaws 455
Hamza Alkofahi, David Umphress, Heba Alawneh

COVID-19 Future Forecasting Using Machine Learning Models 462
Hassan Awada, Jamal Haydar, Ali Mokdad, Ahmad Ghandour

Pre-Service Mathematics Teachers' Perspectives on STEM Education 470
Hanan Shaher Almarashdi, Enas Said Abulibdeh, Eman Zaitoun, Sawsan Taha, Abdalla Abu Libdeh

A Proposed Framework for Early Detection IoT Botnet 474
Ashraf S Mashaleh, Noor Farizah Binti Ibrahim, Mohammad Alauthman, Ammar Almomani

Proactive Charging Mechanism for Wireless Rechargeable Sensor Networks 481
Shifa'A Bani Hamad, Omar Banimelhem

Pancreatic Tumor Detection by Convolutional Neural Networks 486
Muhammed Talha Zavalsiz, Sleiman Alhajj, Kashfia Sailunaz, Tansel Özyer, Reda Alhajj

A Prediction Approach for the Functional Effects of Non-Coding Gene Variants 492
Gözde Yurtdas, Kagan Aslan, Sibel Tariyan Özyer, Tansel Özyer, Mehmet Kaya, Reda Alhajj

The Impact of Implementing ICT to Address Misconceptions About Vector Quantities in the UAE 498
Suzan Al Abidi, Khaleel Alarabi, Farah Alabedi

Faculty Perceptions of Blackboard Learn as the Main Platform for Teaching and Learning 504
Afra Al Mansoori, Osama Taani, Tania Al Aghar, Melissa McMinn

A Case Study of Implementing Life Cycle Cost Analysis in Sustainability Assessment 511
Ayah A. Alkhawaldeh, Mohammad A. Alhassan, Ahmed Elrefae

The Legal Basis of the Right to Explanation for Artificial Intelligence Decisions in UAE Law 515
Ali Hadi Al-Obeidi, Muaath Sulaiman Al-Mulla

An Enriched e-Learning Model to Teach Kids in Arab Countries How to Write Code 519
Hamzeh Aljawawdeh

The Effects of Information Technology on the Educational Sector in the United Arab Emirate 529
Suad Abdulkareem Alwaely, Hanen Lahiani, Hani Aljarrah, Hatem Alqudah

EV Charging Station Placement and Sizing Techniques: Survey, Challenges and Directions for Future Work 539
Mohammad Aljaidi, Nauman Aslam, Ghassan Samara, Sattam Almatarneh, Khaled Al-Qawasmi, Abdullah Alqammaz

A Classifier to Detect Stream Applications Based on Network Traffic Statistical Metrics 545
Omar Darwish, Sarah Herzallah, Majdi Maabreh, Shouroq Al-Eidi, Mahmoud Al-Maani, Yahya Tashtoush

Insiders Detection in the Uncertain IoD Using Fuzzy Logic 553
Sihem Benfriha, Nabila Labraoui

The Degree of Practicing Electronic Management by Kindergarten Principals in Karak Governorate in Light of Corona Pandemic 559
Reda S. M. Al-Mawadieh, Sameer Aowad Kassab Shdaifat, Majdi Adheisat, Mohammad Ahmad Al-Zu'Bi, Ala Eddin Sadeq Jrab, Khaled Al-Sarairah

Engaging Online Learning at AAU and Its Impact on Students' Performance During COVID-19 569
Bayan Abu Shawar, Tarik El Amsy, Nuha Hamada

The Effect of Using Virtual Classrooms on the Attitudes of Student Teachers Toward the Use of Technology in Education 575
Azhar Shater, Eman Zaitoun, Tareq Alkhasawneh, Mohammad Aleassa

Vulnerabilities in Vehicular Ad Hoc Networks and Possible Countermeasures 581
Ghassan Samara, Mohammed Bhaa Eid, Mohammad Aljaidi, Sattam Almatarneh, Mohammad Rasmi, Raed Alazaideh, Yasser Al-Lahham

Artificial Intelligence in Sustaining Internal Communication in Corporate Sector: The Mediation of Two-Way Communication Perspective of PR 586
Faycal Farhi, Riadh Jeljeli, Abdelhafid Belarbi

Design and Modeling of a Walking Robot: A Human Factor Analysis 593
Yazeed Ghadi, Tarik Elamsy

Educational Tool for ABET Accreditation 597
Tarik A. Elamsy, Souheil A. Akacha, Bayan Abu Shawar, Yazeed Ghadi, Mohammad S. Daoud

Factors Influencing Employees Trust in AI & Its Adoption at Work: Evidence from United Arab Emirates 604
Iffat Sabir Chaudhry, Rene Y. Paquibut, Habib Chabchoub

A Review Study on Arabic Text Classification 611
Musab Mustafa Hijazi, Akram Zeki, Amelia Ismail

Design and Simulation of a 3-Transistor Active Pixel Sensor Using MATLAB Simulink 624
Anas Al Tarabsheh, Huda Alheeh

Critical Analytical Insights of Palliative Care Process Modelling in a Regional Cancer Care 628
Yousra Odeh, Dina Tbaishat, Omar Shamieh, Mohammad Odeh

Digital Image Slicing to Strengthen the Security of LSB Technique of Encrypting Text Messages 637
Mohamad M Al-Laham, Firas Omar, Ziad A Alqadi

The Potential Application of NFT in the Publishing Industry; Opportunities and Challenges 643
Maha Rahrouh, Walid Alayash, Mamdouh Ghanem

The Effectiveness of Blended Learning in Improving the Reflective Thinking Skills of Sixth-Grade Students in Islamic Studies in the United Arab Emirates 648
Usama Diabat, Majed Aljallad

Motivating Pre-School Children to Learn Creative Thinking in Jordan Using iPad Applications: A Mixed-Methods Approach 655
Mohammad Ahmad Al-Zu'Bi, Kholoud Imhammad Al-Mseidin, Abdullah Falah Almajali, Reda S. M Al-Mawadieh, Hayel Khafajeh, Noor Abutayeh

Examining Digital Forensic Evidence for Android Applications 662
Mohammad Rasmi Al-Mousa, Qutaiba Al-Zaqebah, Ala'A Saeb Al-Sherideh, Mohammed Al-Ghanim, Ghassan Samara, Sattam Al-Matarneh, Mahmoud Asassfeh

Wireless Power Transfer Using Magnatic Core with Air Gaps 670
Mohammad Al-Hattab

Planar Tunable 3rd Order Bandpass Filter for GPS Applications 674
Rana Mahmoud, Lama Mahmoud

On the Design of Low-Power RF Mixers 679
Dima Al Odeh, Taghreed Madi, Mawahib Sulieman

An Overview on Detecting Digital Image Splicing 683
Mohammed S. Khazaal, Monji Kherallah, Faiza Charfi

An Effective Personal Identification System Using Hand Dorsal Modality and Deep Learning Approach 687
Korichi Maarouf, Korichi Aicha, Kherallah Monji

Polarity Classification of Hotel Reviews: Lexicon-Based Method 693
Sattam Almatarneh, Israa Abdullah Almatarneh, Ghassan Samara, Mohammad Aljaidi, Amneh Alamleh, Aref Abuawad

Investigating Student Perceptions of Augmented Reality Utilizing Technology Acceptance Model (TAM) 697
Sawsan Taha, Enas Abulibdeh, Eman Zaitoun, Sumaya Daoud, Hanadi G. Rawagah

Critical Analysis of Palliative Homecare Using the i* Framework's Strategic and Social Requirements Modelling Applied to a Cancer Care Organisation 704
Dina Tbaishat, Yousra Odeh, Faten F. Kharbat, Omar Shamieh, Mohammad Odeh

Plagiarism Detection in Arabic Documents Using Word2vector and Arabic WordNet 709
Khaled Omar, Ammar Hilal

Utilizing Drones in Long-Term Construction Projects: The Impact on Cash Flow Management 714
Amer Qasim, Ghaleb A. El Refae, Sorouq El Etter

The Impact of Data Mining Techniques on Information Quality: Insurance Companies as Case 718
Abdul Razzak Alshehadeh, Ghaleb A. Elrefae, Haneen A. Al-Khawaja, Shorouq F. Eletter, Amer Qasim

The Emerging Engineering Applications of Artificial Neural Networks: A Visionary Study 726
Mohammad Alhassan, Layla Amaireh, Haythem Bany Salameh, Mohannad Alhafnawi, Nour Betoush

Always-On!! a Quantitative Assessment of Higher Education Institutions' Activities on Facebook 732
Ajayeb Salama Abudaabes, Imen Gharbi, Mohammad Hani Al-Kilani, Walaa Saber Ismail

Multi-Objectives AI-based Optimization Model for Microplastics- Free Water Bottles 738
Lama Mahmoud, Zaid Almahmoud, Roba Saab, Hessa Al-Ali

A Code Transformation Approach to Enhance Code Cardinality Understanding..... 743
Isam Jebreen

A New Metaheuristic Approach Based Feature Selection for Arabic Text Categorization..... 748
Meryeme Hadni, Hjiaje Hassane

Perspectives on E-Learning in Universities of the Arab Countries 755
Hatem Alqudah, Suad Abdulkareem Alwaely, Hanen Lahiani, Hani Aljarrah

Influences of Technology Integration Education on Professors' and Students' Perceptions in the UAE Universities 761
Hani Aljarrah, Hatem Alqudah, Suad Abdulkareem Alwaely, Hanene Lahiani

Author Index