

2017 International Conference on New Trends in Computing Sciences (ICTCS 2017)

**Amman, Jordan
11-13 October 2017**



**IEEE Catalog Number: CFP17HAB-POD
ISBN: 978-1-5386-0528-8**

**Copyright © 2017 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:	CFP17HAB-POD
ISBN (Print-On-Demand):	978-1-5386-0528-8
ISBN (Online):	978-1-5386-0527-1

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

2017 International Conference on New Trends in Computing Sciences

ICTCS 2017

Table of Contents

Introduction.....	x
Acknowledgments.....	xi
Message from Organizing Chair.....	xii
Message from Conference Chair.....	xiii
Advisory Committee.....	xiv
Organizing Committee.....	xv
Technical Program Committee.....	xvi
Keynotes.....	xix

Track 1: Artificial Intelligence

Comparison of Crossover Types to Build Improved Queries Using Adaptive Genetic Algorithm	1
<i>Khaled Almakadmeh and Wafa' Alma'aitah</i>	
Arabic Cultural Style Based Music Classification	6
<i>Lama Soboh, Islam Elkabani, and Ziad Osman</i>	
Binary Dragonfly Algorithm for Feature Selection	12
<i>Majdi M. Mafarja, Derar Eleayan, Iyad Jaber, Abdelaziz Hammouri, and Seyedali Mirjalili</i>	
Reconfigurable Implementation of Fuzzy Inference System Using FPGA	18
<i>Mehdi Mohammadi and Adnan Shaout</i>	
CNN-based Prediction of Frame-Level Shot Importance for Video Summarization	24
<i>Mohaiminul Al Nahian, A. S. M. Iftekhhar, Mohammad Tariqul Islam, S. M. Mahbubur Rahman, and Dimitrios Hatzinakos</i>	
Two Stage Intelligent Automotive System to Detect and Classify a Traffic Light	30
<i>Nevrus Kaja, Adnan Shaout, and Omid Dehzangi</i>	

Evaluating the Performance of "Derandomized-LShade" Algorithm on CEC 2014 Benchmark Functions	36
<i>Raghda Hraiz, Mariam Khader, Mostafa Z. Ali, and Amjad Hudaib</i>	
A Novel Cloud Services Recommendation System Based on Automatic Learning Techniques	42
<i>Rahma Djrour, Meriem Amel Guessoum, Kamel Boukhalfa, and Elhadj Benkhelifa</i>	
Statistical Selection of CNN-based Audiovisual Features for Instantaneous Estimation of Human Emotional States	50
<i>Ramesh Basnet, Mohammad Tariqul Islam, Tamanna Howlader, S. M. Mahbubur Rahman, and Dimitrios Hatzinakos</i>	
Link Prediction Based on Whale Optimization Algorithm	55
<i>Reham Barham and Ibrahim Aljarah</i>	
Motor Imagery EEG Signal Processing and Classification Using Machine Learning Approach	61
<i>Sreeja. S. R, Joytirmoy Rabha, K. Y. Nagarjuna, Debasis Samanta, Pabitra Mitra, and Monalisa Sarma</i>	

Track 2: Data Science and Big Data

Using Fuzzy Method for Decision Making in Local Government	67
<i>Bashar H. Hewaidi</i>	
A New Technique for File Carving on Hadoop Ecosystem	72
<i>Esraa Alshammari, Ghazi Al-Naymat, and Ali Hadi</i>	
A Survey of IT Outsourcing in Jordanian Market	78
<i>Abdallah Qusef and Nisreen Raeq</i>	
Cache Optimization in IPTV Network Using Big Data Analytics and Mobile Agent Technology	83
<i>Hasan Al-Sakran</i>	
A Framework for Real Time News Recommendations	89
<i>Jalal Omer Atoum and Ibrahim Mohamed Yakti</i>	
Development of Customs Prediction Model for Online Ordering	94
<i>Lina I. Sharawi, George Sammour, Hamzah Qabbaah, and Koen Vanhoof</i>	
Optimized ANN-ABC for Thunderstorms Prediction	98
<i>Mais Ziad Younes Yassen, Ruba Amjad Salameh Al-Jundi, and Nailah Shukri Aziz Al-Madi</i>	
Arabic Sentiment Classification: A Hybrid Approach	104
<i>Mariam Biltawi, Ghazi Al-Naymat, and Sara Tedmori</i>	
LSHADE Enhancement Using MTS-LS1	109
<i>Marwah Alian, Dima Suleiman, and Mostafa Z. Ali</i>	

The Effects of Features Selection Methods on Spam Review Detection Performance	116
<i>Wael Etaiwi and Arafat Awajan</i>	

Track 3: Computer and Network Security

Passive DNS Analysis Using Bro-IDS	121
<i>Abdulla Dakhgan, Ali Hadi, Jaafer Al Saraireh, and Doaa Alrababah</i>	
An Efficient Two-Server Authentication and Key Exchange Protocol	127
<i>Durbadal Chattaraj, Monalisa Sarma, and Debasis Samanta</i>	
Phishing Websites Prediction Using Classification Techniques	133
<i>Dyana Rashid Ibrahim and Ali Hussein Hadi</i>	
Smart Parser for Identifying and Detecting Insecure Functions	138
<i>Esraa Al-Shammari, Ali Hadi, and Malik Qasaimeh</i>	
State of the Art in Computer Forensic Education-A Review of Computer Forensic Programmes in the UK, Europe and US	144
<i>Georgios A. Dafoulas, David Neilson, and Sukhvinder Hara</i>	
Threat Hunting Using GRR Rapid Response	155
<i>Hussein Rasheed, Ali Hadi, and Mariam Khader</i>	
Differentially Private Variance Reduced Stochastic Gradient Descent	161
<i>Jaewoo Lee</i>	
Experimental Evaluation of a Multi-layer Feed-Forward Artificial Neural Network Classifier for Network Intrusion Detection System	167
<i>Malek Al-Zewairi, Sufyan Almajali, and Arafat Awajan</i>	
A Proposed Password-Free Authentication Scheme Based on a Hybrid Vein-Keystroke Approach	173
<i>Maria Habib and Ja'far Alqatawna</i>	
Visualizing Clustered Botnet Traffic Using t-SNE on Aggregated NetFlows	179
<i>Muayyad Saleh Alsadi and Ali Hussein Hadi</i>	
An Efficient E-Coin Scheme under Elliptic Curve Cryptography	185
<i>Mustafa Al-Fayoumi, Sattar Aboud, Mohammad Al-Fayoumi, and Jaafer Al Saraireh</i>	
Novel Algorithm in Symmetric Encryption (NASE): Based on Feistel Cipher	191
<i>Safiah I. Bani Baker and Alaa Hussein Al-Hamami</i>	
Toward a Detection Framework for Android Botnet	197
<i>Wadi' Hijawi, Ja'far Alqatawna, and Hossam Faris</i>	
Securing Distributed SDN Controllers against DoS Attacks	203
<i>Wael Etaiwi, Mariam Biltawi, and Sufyan Almajali</i>	

Track 4: Natural Language Processing

Arabic LFG-inspired Dependency Treebank	207
<i>Dana Halabi, Arafat Awajan, and Ebaa Fayyoumi</i>	
Deep Learning Based Technique for Plagiarism Detection in Arabic Texts	216
<i>Dima Suleiman, Arafat Awajan, and Nailah Al-Madi</i>	
Building Domain Ontology: Experiences in Developing the Prophetic Ontology Form Quran and Hadith	223
<i>Hanan A. Al-Sanasleh and Bassam H. Hammo</i>	
Using Hybrid-Stemming Approach to Enhance Lexicon-Based Sentiment Analysis in Arabic	229
<i>Hunaida Awwad and Adil Alpkocak</i>	
Arabic Word Sense Disambiguation - Survey	236
<i>Marwah Alian, Arafat Awajan, and Akram Al-Kouz</i>	
Building Arabic Polarized Lexicon from Rated Online Customer Reviews	241
<i>Mohammad Daoud</i>	
Detecting Quotable Sentences from Text Using Syntactic Token Augmentation and Recurrent Neural Networks	247
<i>Sumit Terkhedkar and Janak Porwal</i>	

Track 5: Software Engineering

Software Defect Prediction using Feature Selection and Random Forest Algorithm	252
<i>Dyana Rashid Ibrahim, Rawan Ghnemat, and Amjad Hudaib</i>	
Requirements Prioritization Techniques Review and Analysis	258
<i>Raneem Qaddoura, Alaa Abu-Srhan, Mais Haj Qasem, and Amjad Hudaib</i>	
Screen Size Effect on Usability of Arabic Forms for Smartphones	264
<i>Rihabb Alsalamen and Ghassan Shahin</i>	

Track 6: Internet of Things

A Survey: Authentication Protocols for Wireless Sensor Network in the Internet of Things; Keys and Attacks	270
<i>Doaa Alrababah, Esraa Al-Shammari, and Areej Alsuht</i>	
A Cost Effective Information Display System Based on Open Source Technologies	277
<i>Feras Al-Hawari, Hadi Etaiwi, and Sahel Alouneh</i>	
Innovation in Education via Problem Based Learning from Complexity to Simplicity	283
<i>Mohammed Saleh, Nedaa Al Barghuthi, and Sonia Baker</i>	

Smart Water Distribution Management System Architecture Based on Internet of Things and Cloud Computing	289
<i>Sawsan Khaleel Alshattnawi</i>	

Track 7: Miscellaneous

On Utilizing the Pursuit Paradigm to Enhance the Deadlock-Preventing Object Migration Automaton	295
<i>Abdolreza Shirvani and B. John Oommen</i>	
Context Aware VR Using BLE Beacons	303
<i>Ahmad Jarrar and Edward Jaser</i>	
Toward a Model for E-learning Recommender System Adoption: a Pilot Study	309
<i>Hadeel Alharbi and Kamaljeet Sandhu</i>	
Dynamic Evolution of Hashtags on Twitter: A Case Study from Career Opportunities Groups	314
<i>Layal Abu Daher, Rached Zantout, and Islam Elkabani</i>	
Web-Based Augmented Reality with Natural Feature Tracking and Advanced Rendering	320
<i>Mohammed A. Al-Zoube</i>	
Fast Block Matching Criterion for Real-Time Video Communication	327
<i>Nijad A-Najdawi</i>	
The Theory and Applications of the Stochastic Point Location Problem	333
<i>Anis Yazidi and B. John Oommen</i>	
Author Index	342