International Conference on Communications, Management, and Information Technology 2015 (ICCMIT'2015)

Procedia Computer Science Volume 65

Prague, Czech Republic
20 - 22 April 2015

Part 1 of 2

Editors:

Vaclav Snasel
Marcelo Alancar
Darota Jeloneck
Abdel Badeeh Salem
Luigi Valanderau
Yacoub Saleh
Senthil Kumar
Evgenia Theodoutou

ISBN: 978-1-5108-1607-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

http://www.elsevierpublishingsolutions.com/contact.asp

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Available online at www.sciencedirect.com

ScienceDirect

Procedia Computer Science 65 (2015) iii–vii

Procedia Computer Science

Contents

Preface
V. Snasel, M.S. Alencar, D. Jelonek, A.-B. Salem, L. Vladareanu, Y. Saleh, S. Kumar, E. Theodouto 1
Medium Access Control Protocols for Wireless Sensor Networks Classifications and Cross-layering
A.S. Althobaiti, M. Abdullah 4
Advanced Object Monitoring Using Wireless Sensors Network
M. Al Rawajbeh, A. Haboush 17
A Novel Multi-threshold Energy (MTE) Technique for Wireless Sensor Networks
H. Rahhala, R.A. Ramadan 25
Density Grid-based Clustering for Wireless Sensors Networks
M. Abdullah, H.N. Eldin, T. Al-Moshadak, R. Alshaik, I. Al-Anesi 35
Location-free Minimum Coverage Determination in a Heterogeneous Wireless Sensor Network
A.M. Khedr 48
Development of RLS Algorithm for Localization in Wireless Sensor Networks
K.R. Rao, P.V.R.D. Prasad Rao, J.V.N. Ramesh, P. SubbaReddy, S.S.K. Velivela, T. Rajesh, S. Baji 58
Robust Multicast Delivery for WLANs: Transforming Theory into Practice
B. Bulut, D. Berkovskyy, V. Sgardoni, A. Doufexi, A. Nix 65
Automatically Provisioned Embedded Systems in Managed Networks
J. Slachta, M. Voznak, H.T. Cruz, P. Fazio 76
Ambulatory Health Monitoring System Using Wireless Sensors Node
M. Fezari, R. Rasras, I.M.M. El Emary 86
A Proposed Security Layer for the Internet of Things Communication Reference Model
H.M. Aldosari 95
Aircraft Composite Spoiler Fitting Design Using the Variable Density Model
V.A. Komarov, E.A. Kishov, E.I. Kurkin, R.V. Charkviani 99
Cognitive Vehicular Networks: An Overview
F.B.S. de Carvalho, W.T.A. Lopes, M.S. Alencar, J.V. S. Filho 107
Performance Evaluation of the PWSSIM Metric for HEVC and H.264
J.F.F. de Oliveira, C.D.M. Regis, M.S. de Alencar 115
Kinect 3D Point Cloud Live Video Streaming
Z.N. Sultani, R.F. Ghani 125
Algebraic and k-ε Turbulence Model Comparison in the Problem of the Boundary Layer on the Walls of a Rotating Axisymmetric Diffuser
E.I. Kurkin, V.G. Shakhov 133
Performance of Cognitive Spectrum Sensing Based on Energy Detector in Fading Channels
F.B.S. de Carvalho, W.T.A. Lopes, M.S. Alencar 140
Social Media Content Ranking Based on Social Computing and User Influence
K. Ntalianis, A.-B.M. Salem, I. El Emary 148
Multi-Sensory Approach through the Use of ICT for the School Inclusion of a Child with Down Syndrome
T. Kyriakou, G. Charitaki, A. Kotsopoulou 158
The Effects of Using Information and Communication Technologies Instead of Traditional Paper Based Test, During the Examination Process, on Students with Dyslexia.
E. Anestis 168
Italian Presence in the Dodecanese 1912–1943: Teaching a History Topic in Weebly Environment
D. Giannopoulos 176
Developing a Computer Programming MOOC
N. Spyropoulou, G. Demopoulou, C. Pierrakeas, I. Koutsonikos, A. Kameas 182
Application Reality of Knowledge Management Processes Practice in Leaning Resources Centres: Case Study of Learning Resources Centres in Makkah al-Mukarramah Schools in Saudi Arabia
A. Anashri Alnashri 192
Cyber Physical Systems Oriented Robot Development Platform
I.S. Sacala, M.A. Moisescu, I.D.C.A. Munteanu, S.I. Caramihai 203
An Active Support Instrument for Innovation in Deep Uncertainty – The Strategic Management Ingredients in Robotics and Mechatronics
M. Boscoianu, C. Cioaca, V. Vladareanu, C.-E. Boscoianu 210

doi:10.1016/S1877-0509(15)03061-6

Haptic Interfaces for Compensating Dynamics of Rescue Walking Robots
O. Melinte, L. Vladareanu, R.A. Munteanu, H. Yu 218
The Optimization of Intelligent Control Interfaces Using Versatile Intelligent Portable Robot Platform
V. Vladareanu, R.I. Munteanu, A. Mumtaz, F. Smarandache, L. Vladareanu 225
Stability Analysis of the Walking Robots Motion
M. Migdalovici, L. Vlădăreanu, D. Baran, G. Vlădeanu, M. Radulescu 233
Analysis, Synthesis and Simulation of Compact Two-channel Boost Converter for Portable Equipments Operating with a Battery or Solar Cell
W. Emar, Z. Huneiti, S. Hayajneh 241
Identification and Classification of Educational Collaborative Learning Environments
E. Seralidou, C. Douligeris 249
Building Technology and Science Experiences in 3D Virtual World
M. Aristeidou, N. Spyropoulou 259
Distance Learning and the Control Theory Metaphor
P. Roubides 269
Decision Support System and Knowledge-based Strategic Management
B.A. Alyoubi 278
The Effect of ICT on Emotional Education and Development of Young Children with Autism Spectrum Disorder
G. Charitaki 285
An Instructional Design Process for Undergraduate Mathematics Curriculum Online
P. Roubides 294
Security Management: Real Versus Perceived Risk of Commercial Exploitation of Social Media Personal Data
L. Khalil, N.A. Karam 304
Proposed Random Unified Chaotic Map as PRBG for Voice Encryption in Wireless Communication
S.B. Sadkhan, R.S. Mohammed 314
Management of the Transition to e-Learning in Higher Education Based on Competence Quotient
P. Gedeon, L. Khalil 324
Perceive Efficacy of Alteration in Outsources Parts Repair System Upon Performance: Case Study at Powerplant Maintenance Center
S.S. Humaidan 333
Management of Student Records: Data Access Right Matrix and Data Sharing
L. Khalil, M. Khair, J.A. Nassif 342
Simulink Based Implementation of Developed A5/1 Stream Cipher Cryptosystems
S.B. Sadkhan, N.H. Jawad 350
A New Framework for E Academic Advising
A.Y. Noaman, F.F. Ahmed 358
Comparative Analysis for Cloud Based e-learning
F.F. Ahmed 368
A Parallel Tree Based Strategy for 3-way Interaction Testing
M.F.J. Klaib 377
ERP Systems Functionalities in Higher Education
A.Y. Noaman, F.F. Ahmed 385
Exploiting Computational Intelligence Paradigms in e-Technologies and Activities
H.M. Said, A.-B.M. Salem 396
The Role of Virtual Communities of Practice in Knowledge Management Using Web 2.0
H.A.K. Al-ghamdi, A.A.K. Al-ghamdi 406
ECG Signal Transmissions Performance over Wearable Wireless Sensor Networks
D. Eid, A. Yousef, A. Elrashidi 412
Decision Model for Software Architectural Tactics Selection Based on Quality Attributes Requirements
A.E. Sabry 422
Determinants of Social Networks Usage in Collaborative Learning: Evidence from Egypt
N.M. Labib, R.H.A. Mostafa 432
Addressing Challenges of Ultra Large Scale System on Requirements Engineering
A. Safwat, M.B. Senousy 442
An Adaptive Framework for Applying Cloud Computing in Virtual Learning Environment at Education a Case Study of “AASTMT”
A.F. Hegazy, A.E. Khedr, Y. Al Geddawy 450
Feature Analysis of Coronary Artery Heart Disease Data Sets
R. El-Bialy, M.A. Salamay, O.H. Karam, M.E. Khalifa 459
The Role of the Tacit Knowledge in Developing the Human Resources: Critical Analytical Study of the Knowledge Centre in the Industrial Commercial Chamber in Jeddah, the Kingdom of Saudi Arabia
O.M. Alageeli, A.M.A. Aalyateem 469
E-commerce in Developing Countries and How to Develop Them During the Introduction of Modern Systems
A.A. Alyoubi 479

The Development of Knowledge About the Earth and the Day/Night Cycle in Blind and Sighted Children Using Acoustical Rendition of Documents' Visual Elements
K. Eikospentaki, D. Tsonos, G. Kouroupetroglou, S. Vosniadou 484
E-therapy: The Ethics Behind the Process
A. Kotsopoulou, A. Melis, V.-I. Koutsompou, C. Karasarlidou 492
Development of a Multi-vector Information Security Rating Scale for Smart Devices as a Means for Raising Public InfoSec Awareness
S. Kavalaris, F.-E. Kioupakis, K. Kaltsas, E. Serrelis 500
Development of Grammatical Aspect in Specific Language Impairment: Evidence from an Experimental Design with Video Stimuli
K. Konstantzou 510
Designing Educational Blogs Effect on the Student's Knowledge Acquisition in the Secondary Stage: Case Study of KSA Schools
A.M.A. Al Yateem, S. Alsayadi 519
Human Ear Recognition Using Geometrical Features Extraction
A.S. Anwar, K.K.A. Ghany, H. Elmahdy 529
An Intelligent Paper Currency Recognition System
M. Sarfraz 538
Intelligent Techniques in Medical Volume Visualization
Y. Abdallah, A. Abdelhamid, T. Elarif, A.-B.M. Salem 546
A Database for Arabic Handwritten Character Recognition
J.H. AlKhateeb 556
Key Factors Influencing the Usage of MRI in Saudi Arabia
A.K. Jabali, K.Y. Farid, A.-A. Matani, F. Al Mulhim 562
A Trustworthy Reputation Approach for Web Service Discovery
P. El-Kafrawy, E. Elabd, H. Fathi 572
Identifying Circles of Relations from Smartphone Photo Gallery
M. Zein, F. Yakoub, A. Adl, A.E. Hassanien, V. Snasel 582
Information Fusion and Change Point Detection in Mutual Exclusive Distributive Clustering
Y. Singh, U. Chugh, R. Murthy 592
Water Pollution Detection System Based on Fish Gills as a Biomarker
A.H. Sweidan, N. El-Bendary, O.M. Hegazy, A.E. Hassanien, V. Snasel 601
Retinal Blood Vessel Segmentation Approach Based on Mathematical Morphology
G. Hassan, N. El-Bendary, A.E. Hassanien, A. Fahmy, A.M. Shoeb, V. Snasel 612
Multi-objective Gray-wolf Optimization for Attribute Reduction
E. Emary, W. Yamany, A.E. Hassanien, V. Snasel 623
Proposed Framework for Implementing Data Mining Techniques to Enhance Decisions in Agriculture Sector. Applied Case on Food Security Information Center Ministry of Agriculture, Egypt
A.E. Khedr, M. Kadry, G. Walid 633
Towards an Automated Zebrafish-based Toxicity Test Model Using Machine Learning
A. Tharwat, T. Gaber, M.M. Fouad, V. Snasel, A.E. Hassanien 643
A Look-Ahead-Based Heuristic for Packing Spheres into a Bin: The Knapsack Case
H. Akeb 652
An Optimization Methodology for Container Handling Using Genetic Algorithm
G. Abd El-Nasser A. Said, El-Sayed M. El-Horbaty 662
A Framework for Classification and Visualization of Elephant Flows in SDN-based Networks
M. Afaq, S.U. Rehman, W.-C. Song 672
Hybrid Algorithm for Resource Provisioning of Multi-tier Cloud Computing
M.H. Eawna, S.H. Mohammed, El-Sayed M. El-Horbaty 682
An Assistive Object Recognition System for Enhancing Seniors Quality of Life
E. Elhariri, N. El-Bendary, A.E. Hassanien, V. Snasel 691
Quantum Key Distribution: Simulation and Characterizations
O.K. Jasim, S. Abbas, El-Sayed M. El-Horbaty, Abdel-Badeeh M. Salem 701
Preparing Effective Strategy to Apply Social Networks in Saudi Electricity Company
N.B.B. Humaid 711
An Efficient Segmentation Algorithm for Panoramic Dental Images
Y.Y. Amer, M.J. Aqel 718
Knowledge Management Process in Several Organizations: Analytical Study of Modeling and Several Processes
A. Mohammed 726
Rethinking Image of the City in the Information Age
S.A. Al-Ghamdi, F. Al-Harigi 734
E-inclusion Modeling for Blended e-learning Course
I. Vitolina 744
Digital Opportunities for Student's Motivational Enhancement
D. Ratniece, S. Cakula 754

User Behavior in Multi-screen eLearning
A. Kapenieks, B. Zuga, A. Gorbunovs, M. Jirgensons, J. Kapenieks Sr., J. Kapenieks Jr., I. Vitolina, G. Majore, G. Jakobsone-Snepste, I. Kudina, K. Kapenieks, Z. Timsans, R. Gulbis, D. Tomsons, L. Ulmane-Ozolina, J. Letinskis, A. Balode 761
Digital Repositories in the Arab Universities: A Comparative Analytical Study
A.A.M. Abd Allah aalYateem, N.B. Bn Hameed 768
Data Mining and Fusion Techniques for WSNs as a Source of the Big Data
M.M. Fouad, N.E. Oweis, T. Gaber, M. Ahmed, V. Snasel 778
An Exploratory Study to Determine the Suitability of Applying Information Systems Using (SWOT) Analysis, at Administrative Affairs Department in Power Plant Maintenance Centre
S.S. Humaidan 787
Survey on Image Segmentation Techniques
N.M. Zaitoun, M.J. Aqel 797
Tajweed: An Expert System for Holy Qur'an Recitation Proficiency
M.J. Aqel, N.M. Zaitoun 807
Reasoning Techniques for Diabetics Expert Systems
I.M. Ahmed, M. Alfonse, M. Aref, A.-B.M. Salem 813
ESTJ: An Expert System for Tourism in Jordan
N.S. Hussein, M.J. Aqel 821
MLIMAS: A Framework for Machine Learning in Interactive Multi-agent Systems
K.M. Khalil, M. Abdel-Aziz, T.T. Nazmy, A.-B.M. Salem 827
A New Data Mining Model Adopted for Higher Institutions
M.I. Al-Twijri, A.Y. Noaman 836
3-way Interaction Testing Using the Tree Strategy
M.F.J. Klaib, M.S. Al-batah, R.J. Rasras 845
Security Issues over Some Cloud Models
P.M. El-Kafrawy, A.A. Abdo, A.F. Shawish 853
Static Structural Modeling of Large Size Thermostable Infusion Tool from Materials with Different Coefficient of Thermal Expansion
V.A. Komarov, E.I. Kurkin, V.O. Sadykova 859
Bovines Muzzle Classification Based on Machine Learning Techniques
H.M. El Hadad, H.A. Mahmoud, F.A. Mousa 864
Non-renewable Recourses Life Cycles Modeling Aspects
V.K. Semenichev, E.I. Kurkin, E.V. Semenichev, A.A. Danilova, G.A. Fisun, E.I. Kasatkina 872
Simulation of Causal Relations of Stakeholder Management System by Using Fuzzy Cognitive Map Approach – A Comparison of Hungarian and Lithuanian Attitudes
A. Torma, M.F. Hatwágner, D. Susniene, D. Žostautienė, L.T. Kóczy 880
Predictive Control, Competitive Model Business Planning, and Innovation ERP
C.F. Nourani, C. Lauth 891
Fast Forced Handover Technique for Load Balancing in Mobile WiMAX for Real-time Applications
A. Samy, M. Hamdy, N. Semary 901
Text Mining and Similarity Search Using Extended Tri-gram Algorithm in the Reference Based Local Repository Dataset
R. Kumar, R.C. Tripathi 911
Enhanced Particle Swarm Optimization for Task Scheduling in Cloud Computing Environments
A.I. Awad, N.A. El-Hefnawy, H.M. Abdel_kader 920
The PDBO Algorithm for Discrete Time, Cost and Quality Trade-off in Software Projects with Expressing Quality by Defects
A. Saif, S. Abbas, Z. Fayed 930
A Framework for Negotiating Service Level Agreement of Cloud-based Services
R. El-Awadi, M. Abu-Rizka 940
Internet Involvment and Metrics in Adult Education Services Online Marketing in Romania. An Evaluation Study
G. Claudiu-Dan 950
Effects of IT Use in Improving Customer Service Logistic Processes
A. Mesjasz-Lech 961
Internet Accounting Offices
E. Wyslocka 971
Measuring the Effectiveness of Online Advertising Campaigns inthe Aspect of e-entrepreneurship
M. Rzemieniak 980
Spatial Tools for Supporting Regional e-Entrepreneurship
D. Jelonek, I. Pawełoszek, C. Stępniak, T. Turek 988
Analysis of Purchasing Behaviour of Polish e-customers
A. Puto, H. Kościelniak 996
The Role of Big Data Solutions in the Management of Organizations. Review of Selected Practical Examples
A.C. Leszek Ziora 1006
The Role of Open Innovations in the Development of e-Entrepreneurship
D. Jelonek 1013

Innovativeness in Business Models
M. Grabowska 1023
Tools for Building a Temporal Knowledge Base System Supporting Organizational Creativity
M. Mach-Król 1031
Diversity Management as a Part of Corporate Social Responsibility Policy
M. Starostka-Patyk, P. Tomski, M. Zawada 1038
Innovations in e-enterprises on the Polish Market
B. Skowron-Grabowska, K. Sukiennik 1046
BIG DATA in Decision Making Processes of Enterprises
H. Kościelniak, A. Puto 1052
The Selected Areas of E-logistics in Polish E-commerce
M. Kadłubek 1059
New Products Design Decision Making Support by SimaPro Software on the Base of Defective Products Management
M. Starostka-Patyk 1066
The Use of Cloud Computing by Students from Technical University – The Current State and Perspectives
T. Lis, B. Paula 1075
Study of Smartphones Usage from the Customer's Point of View
W. Chmielarz 1085
E-business as a New Trend in the Economy
A. Brzozowska, D. Bubel 1095
The Use of Modern Information Technology in Tourist Information Systems on the Example of City of Czestochowa
R. Biadacz, M. Biadacz 1105
The Prospects of E-commerce in Poland
K. Bredzel-Skowera, T. Turek 1114
The Design of B2B System User Interface for Mobile Systems
M. Łobaziewicz 1124
The Multinational Companies Investments in Central and Eastern European Union
L.P. Blăjuț 1134
Secondment of Government Employees in Saudi Arabia "Between Reality and Expectations"
M.Z. Al-Otaibi 1140
Guidelines on Health Tourism Management for Middle Eastern Tourists in Phuket Province
O. Chanin, P. Khunchumnan, S. Amphansookko, K. Thongyai, J. Rodneum, P. Sriprasert 1146
Evaluating User Readiness towards Digital Society: A Rasch Measurement Model Analysis
A. Salman, A. Abd.Aziz 1154
The Relationship between Transformational Management and Communication Skills among Heads of Departments of KAU
H.M.Z. Al-Bogami 1160
The Active Role of the Training Process to Keep Pace with the Rapid Changes in the ICT Field: KSA Case Study
A.A.H. Al-Johani 1165