

# **8th International Conference on Advances in Information Technology (IAIT 2016)**

Procedia Computer Science Volume 111

Macau, China  
19 – 22 December 2016

**Editors:**

**Simon Fong  
Jinan Fiaidhi**

ISBN: 978-1-5108-4832-0

**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. (2017)

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: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)



## Table of Contents

Preface	
Simon Fong .....	1
Simulated performance of TCP, SCTP, DCCP and UDP protocols over 4G network	
Shahrudin Awang Nor, Raaid Alubady, and Wisam Abduladeem Kamil .....	2
Increasing the expression power of persons' profiles in semantic social networks	
Juha Puustjärvi, and Leena Puustjärvi .....	8
A GA-based feature selection and parameter optimization for support tucker machine	
Dewei Zeng, Shuqiang Wang, Yanyan Shen, and Changhong Shi .....	17
Role of e-trainings in building smart cities	
Shipra Sharma, Shalini Garg, and S. K. Mittal .....	24
The impacts of ERP systems on public sector organizations	
Dahlia Fernandez, Zaini Zainol, and Hawa Ahmad .....	31
An approach on Chinese microblog entity linking combining baidu encyclopaedia and word2vec	
Dongchuan Huang, and Jiali Wang .....	37
Withering process for tree-seed algorithm	
Mustafa Servet Kiran .....	46
Solving 2D strip packing problem using fruit fly optimization algorithm	
İsmail Babaoğlu .....	52
An application of fruit fly optimization algorithm for traveling salesman problem	
Hazim Iscan, and Mesut Gunduz .....	58
The estimation of the electricity energy demand using particle swarm optimization algorithm: A case study of Turkey	
Saban Gulcu, and Halife Kodaz .....	64
Migrating birds optimization (MBO) algorithm to solve knapsack problem	
Erkan Ulker, and Vahit Tongur .....	71
Technology profiles as proxies for measuring functional and frailty status	
Tiffany Tong, Mark Chignell, Mary C. Tierney, Marie-Josée Sirois, Judah Goldstein, Marcel Émond, Kenneth Rockwood, and Jacques S. Lee .....	77
Cognitive capacity and smartphone dual-task gait measurement	
Jenna Blumenthal, Andrea Wilkinson, Rocco Tak For Cheuk, Prachaya Charoenkitkarn, Nipon Charoenkitkarn, and Mark Chignell .....	87
A case study in visualizing disruptions to service quality	
Mark Chignell, Ryan Kealey, Chelsea DeGuzman, Leon Zucherman, and Jie Jiang .....	95

Measuring performance of facebook advertising based on media used: a case study on online shops in Indonesia Tikno .....	105
Principal component analysis to reduce dimension on digital image S. C. Ng .....	113
Efficient visibility analysis for massive observers Wentao Wang, Bo Tang, Xiaopeng Fan, Haixia Mao, Hang Yang, and Min Zhu .....	120
Monitoring frozen shoulder exercises to support clinical decision on treatment process using smartphone Nuntiya Chiensriwimol, Jonathan H. Chan, Pornchai Mongkolnam, and Keerin Mekhora .....	129
Lanczos kernel based spectrogram image features for sound classification Ilyas Ozer, Zeynep Ozer, and Oguz Findik .....	137
An authentication and authorization mechanism for long-term electronic health records management Nai-Wei Lo, Chia-Yi Wu, and Yo-Hsuan Chuang .....	145
Estimation of crowd density in surveillance scenes based on deep convolutional neural network Shiliang Pu, Tao Song, Yuan Zhang, and Di Xie .....	154
Estimating bayesian networks parameters using EM and Gibbs sampling Huimin Chai, Jiangnan Lei, and Min Fang .....	160
Bandwidth analysis of IEEE 802.11AC protocol on ARM platforms: Potential influencing factors Tianlei Gao, Houjin Chen, Jupeng Li, Xin Chen, and Yahui Peng .....	167
The deadlift form analysis system using Microsoft Kinect Suputra Sutthiprapa, Vajirasak Vanijja, and Thanakrit Likitwon .....	174
RaCA: A joint rate and channel adaptation scheme for dense 802.11n networks Tingpei Huang, Shibao Li, and Shaoshu Gao .....	183
A ubiquitous power management system based on environment perception Wei Song, Ning Feng, Yanwei Wang, Wentao Mao, and Liangliang Song .....	190
Risk of overusing mobile phones: Technostress effect Veera Boonjing, and Pisit Chanvarasuth .....	196
The impact of screen size toward QoE of cloud-based virtual desktop Tuul Triyason, and Worarat Krathu .....	203
Research on fog computing based active anti-theft technology Fei Huayu, He Jun, and Wang Menglin .....	209
Effect of network QoS on user QoE for a mobile video streaming service using H.265/VP9 codec Debajyoti Pal, and Vajirasak Vanijja .....	214
Performance comparison between Hadoop and HAMR under laboratory environment Disheng Zhao .....	223
The design of data management system oriented experiment scene simulation demonstration Xie Yang, Zhou Xiaolu, Xie Hui, and Wen Zepeng .....	230
A research on defect image enhancement based on partial differential equation of quantum mechanics Zhonghua Wang, Guiying Chi, and Jun Guo .....	237
Segmentation-based Euler number with multi-levels for image feature description Qian Zhang, Lin Wang, Jiang-Hao Yu, and Minggui Zhang .....	245
RMHC-MR: Instance selection by random mutation hill climbing algorithm with MapReduce in big data Lu Si, Jie Yu, Wuyang Wu, Jun Ma, Qingbo Wu, and Shasha Li .....	252

Container based testbed for gate security using open API mashup Dongwoo Kwon, Hyeonwoo Kim, Donghyeok An, and Hongtaek Ju .....	260
A novel broadcasting MAC algorithm for ad hoc networks Chen Liang, Yu Zhang, and Jian Song .....	268
Quartermaster supplier's pricing problems in dual channel strategy of VMI & TPL mode Wen.Liu, Hai-yan.Wang, and Long-gang.Li .....	277
Rankings of the security factors of human resources information system (HRIS) influencing the open climate of work: using analytic hierarchy process (AHP) Kanyarat Phudphad, Bunthit Watanapa, Worarat Krathu, and Suree Funilkul .....	287
5D GIS virtual heritage Rita Yi Ma Li .....	294
Smart construction safety in road repairing works Rita Yi Ma Li .....	301
The simulation analysis for a kind of fractional order kalman estimator Xiaojun Sun, Guangming Yan, and Bo Zhang .....	308
Infrared small target detection based on relevance vector regression Lipeng Liu, Jingzhuo Wang, and Ruiming Liu .....	315
Daily Human Activities Recognition Using Heterogeneous Sensors from Smartphones Minh-Son Dao, Tuan-Anh Nguyen-Gia, and Van-Cuong Mai .....	323
Intelligent REITs in the information age Shimin Hu .....	329
Modeling and simulating a smart information-based real estate online platform Shimin Hu, and Qing Li .....	339
Comparison of open source maturity models Umm-e-Laila, Adnan Zahoor, Khalid Mehboob, and Sarfaraz Natha .....	348
Application of dynamic program slicing technique in test data generation Mao yang hong, and Lin ruo qin .....	355
A course control system of unmanned surface vehicle (USV) using back-propagation neural network (BPNN) and artificial bee colony (ABC) algorithm Yang Fang, Muye Pang, and Biao Wang .....	361
Domestic water consumption monitoring and behaviour intervention by employing the internet of things technologies Lili Yang, Shuang-Hua Yang, Ewa Magiera, Wojciech Froelich, Tomasz Jach, and Chrysi Laspidou .....	367
CNN for situations understanding based on sentiment analysis of twitter data Shiyang Liao, Junbo Wang, Ruiyun Yu, Koichi Sato, and Zixue Cheng .....	376
Plagiarism detection using document similarity based on distributed representation Kensuke Baba, Tetsuya Nakatoh, Toshiro Minami .....	382
Research on the evaluation of wind power projects of investment risk Jia Xinyao, Han Yongjun, and Liu Fuchao .....	388
SSTI and its mitigation in wind farms connected with an HVDC line Wenhui Qu, and Jianguo Jiang .....	399
Interconnection Inverter Control System of PMSG Wind Power Generation Saravut Reangkittakarn, and Sirichai Tammaruckwattana .....	406

Multi-criteria decision making for 1.5 MW wind turbine selection Lütfü Şağbanşua, and Figen Balo .....	413
Study on Physical and Mechanical Properties with Its Environmental Impact in Konawe - Indonesia upon Utilization of Sago Husk as Filler in Modified Structural Fly Ash – Bricks Kurniati Ornam, Masykur Kimsan, La Ode Ngkoimani, and Santi .....	420
Trigeneration Solar Thermal System S.K Deb, and B.C. Sarma .....	427
Gender Differences in Affective Response from Warning Pictorials on Cigarette Label Arisara Jiamsanguanwong, Pat-Arin Chanduen, and Wipawee Tharmmaphornphilas .....	435
Spark-based Distributed Multi-features Hybrid IPTV Viewing Implicit Feedback Scoring Model YUE Jin, GU Junhua, ZHANG Suqi, and ZHANG Jian .....	441
The Primary Language of the Human Brain Boris Stilman .....	448
Speech Behavior Analysis by Articulatory Observations Yan Ji, Jianguo Wei, Jingshu Zhang, Qiang Fang, Wenhuan Lu, Kiyoshi Honda, and Xugang Lu .....	463
Consumer Acceptance of eHealth among Rural Inhabitants in Developing Countries (A Study on Portable Health Clinic in Bangladesh) Nazmul Hossain, Hiroshi Okajima, Hironobu Kitaoka, and Ashir Ahmed .....	471
Towards the Algorithm of Discovery: Identifying the Rules that link tRNA and mRNA Boris Stilman, and Nesreen Alharbi .....	479
A Dynamic Spatial Clustering for Emergency Response based on Hierarchical-Partition Model Yilang Wu, Junbo Wang, Sato Kouichi, and Zixue Cheng .....	485