EMERGING 2016

The Eighth International Conference on Emerging Networks and Systems Intelligence

October 9 - 13, 2016

Venice, Italy

EMERGING 2016 Editors

William Hurst, Liverpool John Moores University, UK

Fosso Wamba Samuel, University of Toulouse - Toulouse, France

Huang Jen-Fa, National Cheng Kung University -Tainan, Taiwan

Wen-Piao Lin, Chang Gung University -Taoyuan, Taiwan

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© (2016) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2016)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

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
Web: www.proceedings.com

TABLE OF CONTENTS

EMERGING 1 / ONARP I: OPTICAL NETWORKS ACCESSING, ROUTING, AND POSITIONING

Photonic True Time-Delay Beam Steering for Radars 1
Wen Piao Lin, Yu-Fang Hsu

An Integrated Radio-over-fiber and Passive-optical-network for Bidirectional Photonic Accesses 6
Chiu Wei-Hung, Tsai Wen-Shing, Chen Yi-Lin, Lu Hai-Han

Lightwave Robot Positioning based on Composite Codes Acquisition and Evolutionary Computations 11
Chun-Chieh Liu, Jhe-Ren Cheng, Jen-Fa Huang

EMERGING 2 / BDA-CS: BIG DATA ANALYTICS IN CRITICAL SYSTEMS

Micro-CI: A Critical Systems Testbed for Cyber-Security Research 17
William Hurst, Nathan Shone, Qi Shi, Behnam Bazli

A Cyber-Support System for Distributed Infrastructures 23
Sahar Badri, Paul Fergus, William Hurst

Impact of Topology on Service Availability in a Smart Grid Advanced Metering Infrastructure 29
Bashar Alohali, Kashif Kifayat, Qi Shi, William Hurst

Smart Monitoring: An Intelligent System to Facilitate Health Care across an Ageing Population 34
Carl Chalmers, William Hurst, Michael MacKay, Paul Fergus

EMERGING 3: INTELLIGENT SERVICES

Recommendation Method to Make Combined Video from Video Segments 40
YunKyung Park, KyungDuk Moon, Jungtaek Kim, Seungjin Choi

The Study on Effective Management of Cyber Incidents in Graph Database 42
Seulgi Lee, Hyeisun Cho, Byungik Kim, Taejin Lee

Dynamic QoS on SIP Sessions Using OpenFlow 45
Jérémy Pagé, Charles Hubain, Jean-Michel Dricot

Machine Learning Techniques for Mobile Application Event Analysis 50
Ben Falchuk, Shoshana Loeb, Chris Mesterharm, Euthimios Panagos

EMERGING 4: ENERGY

Development of an Energy Performance Assessment System for Existing Buildings 56
Youn-Kwae Jeong, Jong-Won Kim, Tae-Hyung Kim, Jong-Woo Choi, Hong-Soon Nam, Il-Woo Lee

Economic Impact Analysis of Energy Conservation Measures for Building Remodeling 59
Hong-Soon Nam, Jin-Tae Kim, Tae-Hyung Kim, Youn-Kwae Jeong, Ii-Woo Lee

Development of Distributed Simulation Environment for Security-Critical Technological Objects by Means of Microservices (Case Study for Underground Mine Ventilation) 63
Alexey Cheptsov

EMERGING 5 / BIBA I: BIG DATA AND BUSINESS ANALYTICS

How is Big Data Transforming Operations Models in the Automotive Industry: A Preliminary Investigation 65
Gary Graham, Royston Meriton, Bethany Tew, Patrick Hennelly

Big Data Analytics and Firm Productivity 69
Liang Guo, Mingtao Fu, Ruodan Lu

EMERGING 6 / ONARP II: OPTICAL NETWORKS ACCESSING, ROUTING, AND POSITIONING

Reconfiguring Composite Signature Labels over Optical MPLS Network Codecs to Secure Data Packets Routing 75
Jen-Fa Huang, Kai-Sheng Chen, Ting-Ju Su

Biploar Optical Labeling with Spectral Amplitude Coding Scheme for Packet Switching over GMPLS Network 81
Kai-Sheng Chen,Chao-Ching Yang, Jen-Fa Huang

Design and Development of a Large-scale Network Testbed on a Research and Education Network 85
Chu-Sing Yang, Pang-Wei Tsai, Jen-Fa Huang, Te-Lung Liu

Cooperative Computing for Mobile Platforms 91
Jing Chen, Jian-Hong Liu, Tin-Yen Lin

EMERGING 7 / BIBA II: BIG DATA AND BUSINESS ANALYTICS

Sentiment Analysis using KNIME: A Systematic Literature Review of Big Data Logistics 96
Gary Graham, Royston Meriton

Relative Importance of Key Requirements of Business Analytics 3.0. : An Empirical Study 100
Samuel Fosso Wamba

What is the Feasible Business Model in the Age of Big Data? Case Studies on the Business Models of Two Chinese Mobile Applications 105
Liang Guo, Mingtao Fu, Ruchi Sharma, Lei Yin, Ruodan Lu, Sebastien Tran

Author Index