

Advances in Intelligent Systems and Computing

Volume 685

Series editor

Janusz Kacprzyk, Polish Academy of Sciences, Warsaw, Poland
e-mail: kacprzyk@ibspan.waw.pl

The series “Advances in Intelligent Systems and Computing” contains publications on theory, applications, and design methods of Intelligent Systems and Intelligent Computing. Virtually all disciplines such as engineering, natural sciences, computer and information science, ICT, economics, business, e-commerce, environment, healthcare, life science are covered. The list of topics spans all the areas of modern intelligent systems and computing.

The publications within “Advances in Intelligent Systems and Computing” are primarily textbooks and proceedings of important conferences, symposia and congresses. They cover significant recent developments in the field, both of a foundational and applicable character. An important characteristic feature of the series is the short publication time and world-wide distribution. This permits a rapid and broad dissemination of research results.

Advisory Board

Chairman

Nikhil R. Pal, Indian Statistical Institute, Kolkata, India

e-mail: nikhil@isical.ac.in

Members

Rafael Bello Perez, Universidad Central “Marta Abreu” de Las Villas, Santa Clara, Cuba

e-mail: rbellop@uclv.edu.cu

Emilio S. Corchado, University of Salamanca, Salamanca, Spain

e-mail: escorchado@usal.es

Hani Hagras, University of Essex, Colchester, UK

e-mail: hani@essex.ac.uk

László T. Kóczy, Széchenyi István University, Győr, Hungary

e-mail: koczy@sze.hu

Vladik Kreinovich, University of Texas at El Paso, El Paso, USA

e-mail: vladik@utep.edu

Chin-Teng Lin, National Chiao Tung University, Hsinchu, Taiwan

e-mail: ctlin@mail.nctu.edu.tw

Jie Lu, University of Technology, Sydney, Australia

e-mail: Jie.Lu@uts.edu.au

Patricia Melin, Tijuana Institute of Technology, Tijuana, Mexico

e-mail: epmelin@hafsamx.org

Nadia Nedjah, State University of Rio de Janeiro, Rio de Janeiro, Brazil

e-mail: nadia@eng.uerj.br

Ngoc Thanh Nguyen, Wroclaw University of Technology, Wroclaw, Poland

e-mail: Ngoc-Thanh.Nguyen@pwr.edu.pl

Jun Wang, The Chinese University of Hong Kong, Shatin, Hong Kong

e-mail: jwang@mae.cuhk.edu.hk

More information about this series at <http://www.springer.com/series/11156>

Thanaruk Theeramunkong
Andrzej M. J. Skulimowski
Takaya Yuizono · Susumu Kunifuji
Editors

Recent Advances and Future Prospects in Knowledge, Information and Creativity Support Systems

Selected Revised Papers from the Tenth International Conference on Knowledge, Information and Creativity Support Systems (KICSS 2015), 12–14 November 2015, Phuket, Thailand

Editors

Thanaruk Theeramunkong
School of Information, Computer,
and Communication Technology (ICT)
Sirindhorn International Institute of
Technology
Thammasat University
Pathum Thani
Thailand

Andrzej M. J. Skulimowski
Department of Automatic Control
and Biomedical Engineering
AGH University of Science and Technology
Kraków
Poland

Takaya Yuizono
Graduate School of Advanced Science
and Technology
Japan Advanced Institute of Science
and Technology
Nomi-shi, Ishikawa
Japan

Susumu Kunifuji
School of Knowledge Science
Japan Advanced Institute of Science
and Technology
Nomi-shi, Ishikawa
Japan

ISSN 2194-5357

ISSN 2194-5365 (electronic)

Advances in Intelligent Systems and Computing

ISBN 978-3-319-70018-2

ISBN 978-3-319-70019-9 (eBook)

<https://doi.org/10.1007/978-3-319-70019-9>

Library of Congress Control Number: 2017956755

© Springer International Publishing AG 2018

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer International Publishing AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

This volume contains a number of selected papers that were presented at the 10th International Conference on Knowledge, Information and Creativity Support Systems (KICSS'2015) in Phuket, Thailand, during November 12–14, 2015. Among 45 submitted papers, we carefully reviewed and accepted 13 regular papers (28.89% of them), five short papers (11.11% of them), and six workshop papers with aiming to explore diversity of current issue across various themes. All selected papers included in this series deeply discuss the latest advances in blending of innovative thinking support systems, information science, knowledge science, service science, and creativity science in order to bringing together an innovation design model combined with knowledge management, management of technology, and management of service.

Finally, we would be grateful to all authors for their contribution through academic researches. We also would like to thank the International Conference on Knowledge, Information and Creativity Support Systems (KICSS'2015) Executive Committees and Program Co-chairs for entrusting us to process and deliver valuable academic researches to envision a shape of future aspects in the Creativity Support System research area.

Pathum Thani, Thailand
Kraków, Poland
Nomi-shi, Japan
Nomi-shi, Japan
June 2017

Thanaruk Theeramunkong
Andrzej M. J. Skulimowski
Takaya Yuizono
Susumu Kunifuji

Organization

Organizing Committee

Honorary Co-chairs

Somnuk Tangtermsirikul, Thammasat University, Thailand
Sarun Sumriddetchkajorn, NECTEC, Thailand
Hiroshi Motoda, Osaka University, Japan

General Co-chairs

Susumu Kunifuji, JAIST, Japan
George Angelos Papadopoulos, University of Cyprus, Cyprus
Vilas Wuwongse, Asian University, Thailand

International Advisory Committee

Chang Duk Jung, Korea University, Korea
Ho Tu Bao, JAIST, Japan
Kok-Leong Ong, Deakin University, Australia
Pham Tho Hoan, Hanoi National University of Education, Vietnam
Sanparith Marukatat, NECTEC, Thailand
Takeo Higuchi, IMS Institute, Japan
Thomas Koehler, Dresden University of Technology, Germany
Vincent C.S. Lee, Monash University, Australia
Xijin Tang, Chinese Academy of Sciences, China

Program Co-chairs

Thanaruk Theeramunkong, Thammasat University, Thailand
Takaya Yuizono, JAIST, Japan
Andrzej M.J. Skulimowski, P&BF/AGH, Poland

Publicity Co-chair

Kiyota Hashimoto, PSU, Phuket Campus, Thailand

Organizing Co-chairs

Thepchai Supnithi, NECTEC, Thailand

Rattana Wetprasit, PSU, Phuket Campus, Thailand

Nattapong Tongtep, PSU, Phuket Campus, Thailand

Workshop Co-chairs

Virach Sortlertlamvanich, Thammasat University, Thailand

Teerayut Horanont, Thammasat University, Thailand

Ryoju Hamada, Thammasat University, Thailand

Takayuki Ito, Nagoya Institute of Technology, Japan

Naoki Fukuta, Shizuoka University, Japan

Aziz Nanthaamornphong, PSU, Phuket Campus, Thailand

Publication Co-chairs

Prachya Boonkwan, NECTEC, Thailand

Nongnuch Ketui, RMUTL, Nan, Thailand

Ilya Sadeghi Ardakani, Thammasat University, Thailand

Christoph Senn, Thammasat University, Thailand

Uraiwan Buatoom, Thammasat University, Thailand

Siriwon Taewijit, Thammasat University, Thailand

Post-Proceedings Production Assistant

Siriwon Taewijit, Thammasat University, Thailand

Financial Co-chair

Nichnan Kittiphattanabawon, Walailak University, Thailand

Contents

Detecting TV Program Highlight Scenes Using Twitter Data Classified by Twitter User Behavior	1
Tessai Hayama	
BrainTranscending: A Hybrid Divergent Thinking Method that Exploits Creator Blind Spots	14
Aya Hasebe and Kazushi Nishimoto	
Open Data Integration for Lanna Cultural Heritage e-Museums	29
Watchira Buranasing, Marut Buranarach, and Chai Wutiwiwatchai	
RDF Dataset Management Framework for Data.go.th	42
Pattama Krataithong, Marut Buranarach, and Thepchai Supnithi	
Probabilistic Argumentation for Service Restoration in Power Distribution Networks	54
Nguyen Duy Hung, Santi Kaisaard, and Saung Hnin Pwint Oo	
Experimental Teaching of Collaborative Knowledge Creation Using Analogue Games	69
Tomomi Kaneko, Ryoju Hamada, and Masahiro Hiji	
Ontology-Based Framework to Support Recommendation Rule Management Using Spreadsheet	77
Marut Buranarach, Thanyalak Rattanasawad, and Taneth Ruangrajitpakorn	
Factuality Classification Using Multi-facets Based on Elementary Discourse Units for News Articles	87
Khaing Swe Wynn and Sasiporn Usanavasin	
A Recommender of Transportation Planning in Campus Using Ontology	101
Suwit Somsuphaprungyos, Salin Boonbrahm, Poonpong Boonbrahm, and Taneth Ruangrajitpakorn	

TLex+: A Hybrid Method Using Conditional Random Fields and Dictionaries for Thai Word Segmentation	112
Sarawoot Kongyoung, Anocha Rugchatjaroen, and Krit Kosawat	
An Expert System Using Ontology as Knowledge Base for Personalized Rice Cultivation Suggestion	126
Wichuphon Chariyamakarn, Poonpong Boonbrahm, Salin Boonbrahm, and Taneth Ruangrajitpakorn	
A Knowledge-Based Approach for Generating UML Sequence Diagrams from Operation Contracts	141
Nasith Laosen and Ekawit Nantajeewarawat	
Designing a Social Innovation Based Knowledge Support System: A Preliminary Guideline	156
Ahmet Suerdem, Baskin Yenicioglu, and Ozge Demir	
A Study of Cost, Revenue, and Profit Efficiency of Commercial Banks in Cambodia Using DEA Approach.	168
Sokim Phang and Morrakot Raweewan	
Mapping Knowledge Management for Technology Incubation.	179
Jarot S. Suroso, Abba Suganda Girsang, and Ford Lumban Gaol	
Competition Boosts Innovativeness: The Case of CMS Evolution	188
Andrzej M. J. Skulimowski and Inez Badecka	
Large Scale Mobility Analysis: Extracting Significant Places Using Hadoop/Hive and Spatial Processing	205
Apichon Witayangkurn, Teerayut Horanont, Masahiko Nagai, and Ryosuke Shibasaki	
Modeling Traffic Accidents Occurrences Based on Land Use and Road Factors Using Geographically Weighted Regression Models	220
Paweenuch Songpatanasilp, Teerayut Horanont, Harutoshi Yamada, and Ryosuke Shibasaki	
An Innovative Outdoor IoT System Architecture for Service Oriented Things	233
Takanobu Otsuka, Yoshitaka Torii, and Takayuki Ito	
Ontology-Based Architecture to Improve Driving Performance Using Sensor Information for Intelligent Transportation Systems	245
Susel Fernandez and Takayuki Ito	
An Analysis of Allocation Stability on Approximation-Based Pricing for Multi-unit Combinatorial Auctions.	256
Naoki Fukuta	

Revenue Improvement Mechanisms Based on Advertisement’s Values and Layouts 270
Satoshi Takahashi and Tokuro Matsuo

A Model-Based Method for Modeling and Verifying Event-Based Aspect-Oriented Applications 281
Hong Anh Le, Ninh Thuan Truong, and Aziz Nanthaamornphong

A Retrospective on Constructing a Personal Narrative on Agile Development. 290
Roy Morien