

2015 13th International Conference on ICT and Knowledge Engineering (ICT & Knowledge Engineering 2015)

**Bangkok, Thailand
18 – 20 November 2015**



**IEEE Catalog Number: CFP1528H-POD
ISBN: 978-1-4673-9191-7**

**Copyright © 2015 by the Institute of Electrical and Electronic 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 publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1528H-POD
ISBN (Print-On-Demand):	978-1-4673-9191-7
ISSN:	2157-0981

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

CONTENTS

	Page
Determining Citizen Complaints to The Appropriate Government Departments using KNN Algorithm <i>Suhatati Tjandra, Amelia Alexandra Putri Warsito, Judi Prajetno Sugiono</i>	1
MXML: Implementation of a Web-based Application for Merging XML Documents using XML-SIM <i>Waraporn Viyanon</i>	5
Visualization of relations of stores by using Association Rule Mining <i>Sanetoshi Yamada, Takamitsu Funayama, Yoshiro Yamamoto</i>	11
Visualization of attack and analysis of play affect goal in soccer game <i>Hayate Hibi, Yo Kameoka, Shuichi Uchiyama, Yoshiro Yamamoto</i>	15
Customer Segmentation and Visualization by Combination of Self-Organizing Map and Cluster Analysis <i>Yo Kameoka, Keita Yagi, Shohei Munakata, Yoshiro Yamamoto</i>	19
A Hybrid Encryption model for Secure Cloud Computing <i>Atewologun Olumide, Abeer Alsadoon, P.W.C. Prasad, Linh Pham</i>	24
Multiscale Analysis of Heart Sound for Segmentation using Multiscale Hilbert Envelope <i>L. N. Sharma</i>	33
Visualization of baseball player's defensive range using a probability ellipse <i>Katsuya Kono, Yoshiro Yamamoto</i>	38
Disaster Mitigation Support System using Web Services and SNS Information <i>Takamitsu Funayama, Yoshiro Yamamoto, Makoto Tomita, Yoshitaka Kajita, Sachi Tajima, Keisuke Utsu, Osamu Uchida</i>	42
Information System of Fractional Owned Virtual Hydropower Plant <i>Juha P. Lahti, Petri Helo, Ahm Shamsuzzoha, Kongkiti Phusavat</i>	46
Social Network Analysis and Role Hierarchy Mining through MXML-based Event Logs <i>Parham Porouhan, Wichian Premchaiswadi</i>	52
Process Simulation and Pattern Discovery through Alpha and Heuristic Algorithms <i>Wichian Premchaiswadi, Parham Porouhan</i>	60
Towards an Automated Evaluation Approach for E-Procurement <i>Amira M. Idrees</i>	67

CONTENTS (CONT.)

	Page
Enhancing Information Technology Services for E-Business – The Road towards Optimization <i>Amira M. Idrees, Ahmed Bakr Ibrahim</i>	72
Crop Irrigation Schedule Expert System <i>Maryam Hazman</i>	78
Image Processing for Detection of Dengue Virus based on WBC Classification and Decision Tree <i>Sarach Tantikitti, Sompong Tumswadi, Wichian Premchaiswadi</i>	84
Improvement of Call Center Customer Service in a Thai Bank using Disco Fuzzy Mining Algorithm <i>Poohridate Arpasat, Parham Porouhan, Wichian Premchaiswadi</i>	90
Analysis of Handover of Work in Call Center using Social Network Process Mining Technique <i>Patcharin Panpanich, Parham Porouhan, Wichian Premchaiswadi</i>	97
Analysis of Surgical Event Logs in a Hospital by using Heuristics Miner Technique <i>Wilaiwan Neamsirorat, Wichian Premchaiswadi</i>	105
Time Performance Analysis of Medical Treatment Processes by using Disco <i>Phanchaporn Jaisook, Wichian Premchaiswadi</i>	110
Applying Social Network Miner on Medical Event Logs using Handover of Work Metric <i>Waraporn Meethaisong, Wichian Premchaiswadi</i>	116
Analysis of the Social Network Miner (Working Together) of Physicians <i>Ponlawat Rattanavayakorn, Wichian Premchaiswadi</i>	121
Discovering Organizational Process Models of Resources in a Hospital using Role Hierarchy Miner <i>Chaowalit Krutanard, Parham Porouhan, Wichian Premchaiswadi</i>	125
Analysis of the Patients' Treatment Process in a Hospital in Thailand using Fuzzy Mining Algorithms <i>Eakarach Jaroenphol, Parham Porouhan, Wichian Premchaisawat</i>	131
Analysis of Customer Behavior in a Call Center using Fuzzy Miner <i>Kanok Rattanathavorn, Wichian Premchaiswadi</i>	137

CONTENTS (CONT.)

	Page
Analysis of Call-Center Operational Data Using Role Hierarchy Miner <i>Sompong Wongvigran, Wichian Premchaiswadi</i>	142
Special Consideration for Big Data in IoE or Internet of Everything <i>Srisakdi Charmonman, Pornpisud Mongkhonvanit</i>	147