

# **2016 IEEE International Conference on Knowledge Engineering and Applications (ICKEA 2016)**

**Singapore  
28-30 September 2016**



**IEEE Catalog Number: CFP16H70-POD  
ISBN: 978-1-5090-3472-7**

**Copyright © 2016 by the Institute of Electrical and Electronics 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:	CFP16H70-POD
ISBN (Print-On-Demand):	978-1-5090-3472-7
ISBN (Online):	978-1-5090-3471-0

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2016 IEEE International Conference on Knowledge Engineering and Applications

## ICKEA 2016

### Table of Contents

Preface.....	vii
Conference Committees.....	viii

---

#### Session 1: Data Mining

A Modified Support Vector Clustering Method for Document Categorization .....	1
<i>B. S. Harish, M. B. Revanasiddappa, and S. V. Aruna Kumar</i>	
A Method for Generating Fixing Rules from Constant Conditional Functional Dependencies .....	6
<i>Jinling Zhou, Xingchun Diao, Jianjun Cao, and Xing Zhou</i>	
Does Information Uncertainty Moderate the Impact of Investors' Emotion on Stock Prices?.....	12
<i>Fang-Ming Hsu, and Chien-Ho Liao</i>	
A Novel Hybrid Method for Time Series Subsequence Join .....	18
<i>Vo Duc Vinh, Nguyen Phuc Chau, and Duong Tuan Anh</i>	
Mining Inter-Transaction Recurring Patterns in Time Series .....	23
<i>Rattana Suwanwiwat, Suwatchai Kamonsantiroj, and Luepol Pipanmaekaporn</i>	
The Analysis and Design of the Job Recommendation Model Based on GBRT and Time Factors.....	29
<i>Pengyang Wang, Yingtong Dou, and Yang Xin</i>	

#### Session 2: Information Technology and Applications

WSLA Extensions for Managing Composite Semantic Web Services .....	36
<i>Islam Elgedawy</i>	
Study on Science and Technology Policy Trend Using Text Network Analysis in Korea.....	41
<i>Yun Jong Kim</i>	
A Performance-Satisfied and Affection-Aware MapReduce Allocation Scheme for Intelligent Information Applications .....	46

<i>Jenn-Wei Lin, Amali Selvi, and Joesph Arul</i>	
People Counting Base on Head and Shoulder Information .....	52
<i>Jong Yih Kuo, Guo Ding Fan, Tai Yu Lai</i>	
An Expert System For Risk Assessment Of Information System Security Based On ISO 27002 .....	56
<i>Sari Widya Sihwi, Ferry Andriyanto, and Rini Anggrainingsih</i>	
Event Scheduling with Soft Constraints and On-Demand Re-Optimization .....	62
<i>Patrick Hosein and Steffan Boodhoo</i>	
Combining MeSH Thesaurus with UMLS in Pseudo Relevance Feedback to Improve Biomedical Information Retrieval .....	67
<i>Yuanyuan Zhang, Pradip K Srimani, and James Z. Wang</i>	
E-commerce Business Strategy Analysis and Inspiration: Taking Taobao as an Example .....	72
<i>Chen Gong</i>	

### **Session 3: Computer Science**

Efficient Sentiment Classification of Twitter Feeds .....	78
<i>Nicholas Chamansingh and Patrick Hosein</i>	
Correlating Tweets with the Daily Return Reversal of the US Stock Market .....	83
<i>Shuai Zhao, Yunhai Tong, Xiangfeng Meng, Xianglin Yang, and Shaohua Tan</i>	
A Supervised Method for Ranking Reviews Based on Latent Structure Features .....	88
<i>Jiawei He, Kai Niu, Zhiqiang He, Siye Wang, Zhisong Bie</i>	
Evolving Long-Term Dependency Rules in Lifelong Learning Models .....	93
<i>M. Taimoor Khan, Sonam Yar, Shehzad Khalid, Furqan Aziz</i>	
Application Interface for Gesture Recognition with Kinect sensor .....	98
<i>Dardan Maraj, Arianit Maraj, and Adhurim Hajzeraj</i>	
A Diversifying Hidden Units Method Based On NMF For Document Representation .....	103
<i>Xianlin Jiang, Hui Zhang, Rui Liu and Yuan Zuo</i>	
Simple Visual CAPTCHA Approach .....	108
<i>Hera Arif, Hassan Hajjdiab, Ashraf Khalil</i>	
Support Confidence and Utility of Action Rules Triggered by Meta-Actions .....	113
<i>Angelina A. Tzacheva, Chandra C. Sankar, Sridharan Ramachandran, and Ramya A. Shankar</i>	
A Quality Evaluation Model for Android System Based on Forum Text Mining .....	121
<i>Cangzhou Yuan, You Yue, Shenhong Wei and Naiyu Yin</i>	
MR-Apriori Count Distribution Algorithm for Parallel Action Rules Discovery .....	127

*Angelina A. Tzacheva, Midhun M. Sunny, and Pranava Mummoju*

Situation Reasoning Framework for the Internet of Things Environments Using Deep Learning Results .....133

*Seyoung Park, Mye Sohn, Haeran Jin, Hyunjung Lee*

The Development of a Kinect-Based Online Socio-Meter for Users with Social and Communication Skill Impairments: A Computational Sensing Approach .....139

*Pinata Winoto, Carl Guanxing Chen and Tiffany Y. Tang*

## **Session 4: Knowledge Engineering and Application**

KMS with Hierarchical Administrative Architecture: A Knowledge Administrator Perspective .....144

*Tushar I.Ghosh, Shankha S.Chatterjee and Baisakhi Chakraborty*

Knowledge Representation in Education: Diagramming Carroll's Syllogisms .....150

*Sabah Al-Fedaghi*

Predicting Waiting Time in Customer Queuing Systems .....155

*André Carvalho and Orlando Belo*

Reflection on the Application of DFSG Method .....160

*Mohanad Halaweh*

Design of the Kansei Baby Bags by Using Fuzzy Linguistic Principles .....165

*Hartomo Soewardi and Muhammad Ihsan Nasution*

Ontology-Based Indexing Method for Engineering Documents Retrieval .....172

*Weiguang Fang, Yu Guo, Wenhe Liao*

Development of Working Environment Comfort to Improve Productivity .....177

*Hartomo Soewardi, Amarria Dila Sari, and Putrisari Rizkiningtias*

Prototyping a Cognitive-Centered Model to Improve Knowledge Creation in Geographically Distributed Teams .....181

*Salim Chujfi and Christoph Meinel*

Utilizing Motion Data Retrieval Techniques for Person Identification .....188

*Jing-Fu Juang, and Wei-Guang Teng*

Credit Risk Analysis in Peer-to-Peer Lending System .....193

*Vinod Kumar L, Natarajan S, Keerthana S, Chinmayi K M and Lakshmi N*

Application of Statistical Nonparametric Tests in Dongting Lake, China: 1961-2012 .....197

*Muhammad Tayyab, Jianzhong Zhou, Xiaofan Zeng, Ijaz Ahmad and Rana Adnan*

Knowledge Extraction through Etymological Networks: Synonym Discovery in Sino-Korean Words....202

*Pablo E.and Kyomin Jung*

Multiple Aspect Ranking for Researcher Expertise Finding .....	207
<i>Gridaphat Sriharee and Khantharat Anekboon</i>	
Strategic Approach to the Optimization of Organization Based on the BSC SWOT Matrix .....	212
<i>Olga N. Korableva and Olga V. Kalimullina</i>	
Using Thinking Based on Contradictions to Solve the Problem of Storing Hierarchical Data .....	216
<i>Svetlana Y. Petrova and Anna V. Kapitonova</i>	

## **Session 5: Industrial Production and Scheduling**

Predicting the Gross Calorific Value of Coal Based on Support Vector Machine and Partial Least Squares Algorithm .....	221
<i>Li Jing</i>	
Demand Based Blue Collared Job Allocation using Multiple Priorities and Heuristics .....	226
<i>Sridhar Amirneni, Mukundaram P, Janani Balaji and Nivedha N</i>	
Big Data as an Enabler to Prevent Failures in the Production Area .....	231
<i>Volker Stich, Kerem Oflazgil, Moritz Schröter, Felix Jordan, Gregor Josef Fuhs</i>	
Short-Term Joint Optimization of Cascade Hydropower Stations on Daily Power Load Curve .....	236
<i>Liu Yuan, Jianzhong Zhou, Chuyang Chang, Peng Lu, Chao Wang and Muhammad Tayyab</i>	
An Improved Recommendation Algorithm Based on Bhattacharyya Coefficient .....	241
<i>Huiying Cao, Jiangzhou Deng, Huifang Guo, Bo He, and Yong Wang</i>	
Category Profit Optimization in Retail Industry: An Application on Haircare Products .....	245
<i>Burak Ayan, Alp Ustundag and Peiman Alipour Sarvari</i>	

## **Session 6: Water Engineering**

A Hybrid Model Integrated Variable Fuzzy Set Theory and Set Pair Analysis for Water Quality Assessment in Huai River Basin .....	251
<i>Shuang Zhu, Jianzhong Zhou, Mengfei Xie, Jiang Wu and Xiaoling Ding</i>	
Dynamic OOBNS Applied to Water Management in Dams .....	255
<i>M. Julia Flores, Ann E. Nicholson and Rosa F. Roper</i>	

<b>Author Index</b> .....	261
---------------------------	-----