# 2015 Eighth International Conference on Internet Computing for Science and Engineering (ICICSE 2015)

Harbin, China 6 – 8 November 2015



**IEEE Catalog Number: ISBN:** 

CFP1588D-POD 978-1-5090-0455-3

### 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:
 CFP1588D-POD

 ISBN (Print-On-Demand):
 978-1-5090-0455-3

 ISBN (Online):
 978-1-5090-0454-6

ISSN: 2330-9857

#### **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



# 2015 Eighth International Conference on Internet Computing for Science and Engineering

## **ICICSE 2015**

### **Table of Contents**

Preface	
Conference Organization  Program Committee Members and Reviewers	
Internet Computing	
HPC-Enhanced Software Correlator in Chinese VLBI Networks	1
A Query Mechanism of Massive Relational Data Cross Regional and Multiple  Data Centers  Jing-Mei Li, Qiao Tian, Jia-Xiang Wang, Jian-Li Li, Yu Bai, and Sen Lin	5
Design and Research of the Authority Control Based on Creation Role	11
Integrated Information Supporting Systems in Big Data Applications	15
Research on Program Execution Time Assessment of LLVM IR Program	19
A Method for Microblog Search by Adjusting the Language Model with Time	25
Association Rules for Auditing Systems	29
A Dispatch Method of Complex Information System Based on Service-Oriented Architecture	35
Yan Yan, Haierhan, Zhang Yao, and Liu Sijia	

### **Algorithms and Computational Methods**

The Object Tracking Based on Integral Covariance Matrix	39
Weighted Sub-block Mean-Shift Tracking with Improved Level Set Target  Extraction	43
Xingmei Wang, Hongbin Dong, Yan Chu, Xiaowei Wang, and Lin Li	
The Modified HR Calculus to Reproducing Kernel Hilbert Space and the Quaternion Kernel Least Mean Square Algorithm	50
Wencui Xu and Dongpo Xu	50
Improved Collaborative Filtering Recommendation via Non-Commonly-Rated Items	56
Weijie Cheng, Guisheng Yin, Yuxin Dong, Hongbin Dong, and Wansong Zhang	
The Transformation and Optimization in IR2VHDL	61
Cluster Ensemble Based Image Segmentation Algorithm	68
The Improved Variable Length Counting Bloom Filter Based on Buffer	74
Review of Analytical Modeling and Computational Solutions for Thermo-electrostatics Effects of Slender Bodies  Hongsheng Wang, Zhenghao Sun, Chongdao Wang, Qun Hao, and Jun Ni	79
A New Rapid Acquisition and Tracking Technique for High-Dynamic Spread Spectrum Signals	83
Zhe Li, Xiao Li, Hua Wang, and Qian Wang	
Occluded Face Detection Based on Adaboost Technology	87
Research on Domain-Oriented Latent Policy Lineage Mining Method	91
SIFT Vector Field Building Algorithm	98
System Dependency Graph Construction Algorithm Based on Equivalent Substitution	106
Yulong Meng, Dong Xu, Ziying Zhang, and Wencai Li	
A Review of Uncertain Data Stream Clustering Algorithms	111
Hull Section Cluster Analysis Based on Principle of Similitude	117

Lean Production-Based Ship-Hull Section Assignments Decomposition	123
ISAR Imaging Based on SVA and Time Frequency Analysis	130
Analysis of a Liquid Rocket Combustion Chamber Cooling	135
Teaching-Learning-Based Differential Evolution Algorithm for Optimization  Problems	139
Informatics and Information Technology	
A Volume-Averaged Mathematical Model for Biotransport Part I Macro-Micro  Conservations in Tissue Transports	143
A Volume-Averaged Mathematical Model for Biotransport Part II Macroscopic  Fluxes and Interfacial Transfers	153
SoSE Architecture of Data Intensive Computing for Healthcare Information  System	159
The Research of Software Behavior Recognition and Trend Prediction Method Based on GA-HMM	168
Anatomy of Functional Components of Healthcare Information System  Jun Ni, Ying Chen, Jie Sha, and Minghuan Zhang	172
Migration from HPC-Based Data Processing Systems to Cloud-Computing  Based Data Mining Systems  Jun Ni, Ying Chen, Jie Sha, and Minghuan Zhang	181
Hadoop-Based Distributed Computing Algorithms for Healthcare and Clinic  Data Processing  Jun Ni, Ying Chen, Jie Sha, and Minghuan Zhang	188
Networks and Wireless Networks	
Assessment of Node Reputation in MP2P Based on Fuzzy Comprehensive Evaluation	194
Meijuan Jia, Huiqiang Wang, Junyu Lin, and Guangsheng Feng	
Research and Design for USB and Network Cards Encryption Interface Card	199

Qingfeng Jiang, Chaoguang Men, Baishun Zhang, and Shuang Fu	202
A Fuzzy Ranking Based Buffer Replacement Strategy for Opportunistic  Networks	208
Yushu Zhang, Huiqiang Wang, Guangsheng Feng, and Hongwu Lv	
Research on Communities Detection in Social Network	213
A Web Security Data Detection Based on Group Scanning	218
A Method of Social Network Node Preference Evaluation Based on the Topology Potential	223
A Business-Data-Oriented Workflow Mining Algorithm and Its Application	231
An Improved Strategy to Eliminate Redundant Compilation Based on Dalvik  JIT	237
Education and Distance Learning	
Design of Mobile Micro-English Vocabulary System Based on the Ebbinghaus  Forgetting Theory  Weiyong Zheng	241
Development of E-Commerce Curriculum with Educational Cooperation between Schools and SMEs	247
Evolution of Big-Data-Enhanced Higher Education Systems	253
Mismatches in the Integration of Multimedia Technology into College English  Teaching  Guohua Li	259
An Integration of Etymology with Vocabulary Teaching	262
A Teaching Model of Flipped Classroom Based on MOOC	269
A Measurement of Text Emotion Complexity in Micro-blog	273

Author Index	286
Yu-Ping Jin, Yanzuo Liu, and Guangtao Song	
and AJAXand Research of Teaching Resources Management Based on SSH	279