

# **2012 Ninth Web Information Systems and Applications Conference**

**(WISA 2012)**

**Haikou, China  
16-18 November 2012**



**IEEE Catalog Number: CFP1243I-PRT  
ISBN: 978-1-4673-3054-1**

# 2012 Ninth Web Information Systems and Applications Conference

## WISA 2012

### Table of Contents

Message from the General Chairs.....	ix
Message from the Program Committee Chairs.....	x
Committee Organization.....	xi
Program Committee Members and Reviewers.....	xiii

---

#### Session 1A: Web and Database Technology

An Extended Continuous Uncertain XML Data Model Research.....	3
<i>Xiao-Lin Zhang, Guang-Yue Cui, Li-Xin Liu, and Wei Huo</i>	
A Deep Web Database Sampling Method Based on High Correlation Keywords.....	9
<i>Yongqing Zheng, Yufang Bian, Xin Du, and Hongchen Wu</i>	
Query XML Data in RDBMS.....	15
<i>Xiangyu Hu, Xin Lian, Yunyin Mo, Haiwei Zhang, and Xiaojie Yuan</i>	
Investigations on XML-based Data Exchange between Heterogeneous Databases.....	21
<i>Mingli Wu and Yebai Li</i>	
Layout-Conscious Optimization: Beyond Hybrid Row-Column Storage Model.....	25
<i>Hongliang Tian and Chunxiao Xing</i>	

#### Session 1B: Web Information Management

A Novel URL Assignment Model Based on Multi-objective Decision Making Method.....	31
<i>Qiuyan Huang, Qingzhong Li, and Zhongmin Yan</i>	
An Approach for Crawling Dynamic WebPages Based on Script Language Analysis.....	35
<i>Zhang Yao, Wang Daling, Feng Shi, Zhang Yifei, and Leng Fangling</i>	
Towards Automatic Discovering for a Real-World RESTful Web Service.....	39
<i>Qing Liu, Chenhe Liu, Huian Li, Xiang Xu, and Lexi Gao</i>	
A Variable Granularity User Classification Algorithm Based on Multi-dimensional Features of Users.....	43
<i>Dawen Jia, Cheng Zeng, Zhiyong Peng, Peng Cheng, and Zhimin Yang</i>	

A Composite Events Detecting Approach Based on Similar Sub-events .....	49
<i>Baoyan Song, Huizhen Lou, and Yan Wang</i>	

## **Session 2A: Web Search and Recommendation**

A Hybrid Search Engine Framework for the Internet of Things .....	57
<i>Zhiming Ding, Jian Dai, Xu Gao, and Qi Yang</i>	
Answering Multiple Queries in Compressed Texts .....	61
<i>Bin Wang, Minghe Yu, Xiaochun Yang, and Guoren Wang</i>	
Product Recommendation Based on Search Keywords .....	67
<i>Jiawei Yao, Jiajun Yao, Rui Yang, and Zhenyu Chen</i>	
An Approach for Personalized Tag Recommendation Based on Interest Transfer Model .....	71
<i>Yue Liu, Nan Yang, and Gang Yang</i>	
A Dual Hashtables Algorithm for Durable Top-k Search .....	75
<i>Hua Ming, Yong Zhang, Chunxiao Xing, Haiyan Yin, and Minglu Wang</i>	

## **Session 2B: Web Application System**

Modeling of Parallel Interactive Modes among Collaborative Processes Based on High Level Petri Nets .....	83
<i>Qianqian Xia, Jiantao Zhou, and Chaoxin Sun</i>	
Applied Research of PSO in Parameter Estimation of Richards Model .....	87
<i>Ting-fa Wu, Jun-Bin You, Mei-juan Yan, and Hao-jun Sun</i>	
A New Item Clustering-Based Collaborative Filtering Approach .....	91
<i>Haojun Sun, Tao Wu, Meijuan Yan, and Yunxia Wu</i>	
An Algorithm for Predicting Frequent Patterns over Data Streams Based on Associated Matrix .....	95
<i>Yong-gong Ren, Zhi-dong Hu, and Jian Wang</i>	
Detection Splog Algorithm Based on Features Relation Tree .....	99
<i>Yong-gong Ren, Xue Yang, and Ming-fei Yin</i>	

## **Session 3A: Web Information Security and Assurance**

Software Aging Detection Based on NARX Model .....	105
<i>Su Li and Qi Yong</i>	
Face Recognition Based on PCA and 2DPCA with Single Image Sample .....	111
<i>Luo Min and Liu Song</i>	
nPAKE: An Improved Group PAKE Protocol .....	115
<i>Xiumei Liu, Junjiang Liu, and Guiran Chang</i>	
The Medical Image Watermarking Algorithm with Encryption by DCT and Logistic .....	119
<i>Chunhua Dong, Jingbing Li, Mengxing Huang, and Yong Bai</i>	

### **Session 3B: Social Network and Intelligence**

Distributed and Collaborative Requirements Elicitation Based on Social Intelligence .....	127
<i>Bin Wen, Ziqiang Luo, and Peng Liang</i>	
Inferring Community Members in Social Networks by Closeness Centrality Examination .....	131
<i>Jie Zhang, Xuerui Ma, Weihao Liu, and Yong Bai</i>	
Generating Profiles for a Lurking User by its Followees' Social Context in Microblogs .....	135
<i>Zhao Zhang, Bin Zhao, Weining Qian, and Aoying Zhou</i>	
Using Non-topological Node Attributes to Improve Results of Link Prediction in Social Networks .....	141
<i>Zhang Yu, Li Feng, Xu Bin, Gao Kening, and Yu Ge</i>	
Inferring Individual Influence in Social Network .....	147
<i>Haisu Zhang, Wenyan Gan, and Feng Xu</i>	

### **Session 4A: Distributed Data Management**

<i>Dual-Kad: Kademia-Based Query Processing Strategies for P2P Data Integration</i> .....	155
<i>Zongquan Wang, Guoqing Dong, and Jie Zhu</i>	
Research of Cache Mechanism in Mobile Data Management .....	159
<i>Yang Jun, Lu Shan, and Xu Lizhen</i>	
Research and Improvement of Load Balancing Algorithm in Distributed Sonar Data Stream Management System .....	163
<i>Lu Shan, Han Xuejiao, Yi Li, and Xu Lizhen</i>	
Implementation of Space Optimized Bisecting K-Means (BKM) Based on Hadoop .....	170
<i>Yanshen Yin, Chengguang Wei, Guigang Zhang, and Chao Li</i>	
Evolutionary Analysis of Operation System-of-Systems (SoS) Network Based on Simulated Data .....	176
<i>Yang Liu, Xiao-feng Hu, and Lin Wu</i>	

### **Session 4B: Cloud and Big Data**

Cost Optimization of Cloud-Based Data Integration System .....	183
<i>Peng Zhang, Yanbo Han, Zhuofeng Zhao, and Guiling Wang</i>	
Cloud Backup Scheduling Algorithm Based on Cloud State Table and Cloud Resources Table .....	189
<i>Liang Ge, Junduo Yang, Qingsheng Zhu, Qiang Chen, Kang Lv, Qianqian Wang, Jie Pei, and Xin Luo</i>	
A Data-Centric Storage Approach for Efficient Query of Large-Scale Smart Grid .....	193
<i>Yan Wang, Qingxu Deng, Wei Liu, and Baoyan Song</i>	

DataCloud: An Efficient Massive Data Mining and Analysis Framework on Large Clusters .....	198
<i>Guigang Zhang, Chao Li, Yong Zhang, and Chunxiao Xing</i>	

## **Session 5A: Semantic Web and Ontology**

Implementation and Design of Agricultural Product Cultivating Standard Ontology Database Mode .....	207
<i>Daiyi Li and Li Kang</i>	
Richly Semantical Keyword Searching over Relational Databases .....	211
<i>Jianzhao Zhai, Derong Shen, Yue Kou, and Tiezheng Nie</i>	
OpinMiner: Extracting Feature-Opinion Pairs with Dependency Grammar from Chinese Product Reviews .....	217
<i>Fuzeng Jiao, Guoqing Dong, Qiuyan Li, and Jie Zhu</i>	
A Multilayer Method of Schema Matching Based on Semantic and Functional Dependencies .....	223
<i>Chenlu Zhao, Derong Shen, Yue Kou, Tiezheng Nie, and Ge Yu</i>	
Build the Image File Catalog System Based on the Subdivision of Part-Whole Ontology .....	229
<i>Jifeng Cui, Yong Zhang, and Chunxiao Xing</i>	

## **Session 5B: E-government Technology and Applications**

Topic Detection over Online Forum .....	235
<i>Feng Chen, Juan Du, Weining Qian, and Aoying Zhou</i>	
A Latent Topic Based Collaborative Filtering Recommendation Algorithm for Web Communities .....	241
<i>Yu Qian, Peng Zhiyong, Hong Liang, Yu Ming, and Jia Dawen</i>	
Research on Investment Strategies of E-government System Based on the Survivability .....	247
<i>Meng Xianghong and Wang Xiaoli</i>	
An Optimized Heuristic Algorithm for Fixed Order-Grouping in Seamless Steel Tube Production .....	251
<i>Zhenliao Lv, Zhiguang Ao, and Duan Xu</i>	

<b>Author Index</b> .....	255
---------------------------	-----