

2011 International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

(CyberC 2011)

**Beijing, China
10 – 12 October 2011**



IEEE Catalog Number: CFP1127I-PRT
ISBN: 978-1-4577-1827-4

2011 International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

CyberC 2011

Table of Contents

Welcome.....	xiii
Message from the Steering Committee Chair.....	xiv
Message from the Technical Program Chairs.....	xv
Program Committee.....	xvii
Reviewers.....	xix
Keynote Speakers.....	xxv

Session 1: Distributed Control, Database, Data Mining and Algorithms

A Social-Knowledge-Directed Query Suggestion Approach for Exploratory Search	1
<i>Yuqing Mao, Haifeng Shen, and Chengzheng Sun</i>	
A Two-Layer SVM Classification Mechanism for Chinese Blog Article	9
<i>Guo-Heng Luo, Jia-chiam Liu, and Shyan-Ming Yuan</i>	
An AHP-Based Recommendation System for Exclusive or Specialty Stores	16
<i>Hoang Duy Nguyen, Win-Tsung Lo, and Ruey-Kai Sheu</i>	
Can Collective Use Help for Searching?	24
<i>Darina Dicheva and Christo Dichev</i>	
Efficient Approach for Repeated Patterns Mining Based on Indent Shape of HTML Documents	32
<i>Yanxu Zhu, Gang Yin, Huaimin Wang, Dianxi Shi, Xiang Rao, and Lin Yuan</i>	
Exploring Event Evolution Patterns at the Atomic Level	40
<i>Lei Deng, Zhaoyun Ding, Bingying Xu, Bin Zhou, Yan Jia, and Peng Zou</i>	
Frequent Items Mining on Data Stream Based on Weighted Counts	48
<i>Yanyang Guo, Zhaoyin Jiang, Yuan Yuan Wang, and Qingling Mei</i>	

Iterative Multivariate Regression Model for Correlated Responses Prediction	55
<i>S. Tom Au, Guangqin Ma, and Rensheng Wang</i>	
Router: A Message Passing Model for Large-Scale Graph Mining	60
<i>Zengfeng Zeng and Bin Wu</i>	

Session 2: Network, Services, and Mobile Communication

A Cross-Platform Runtime Environment for Mobile Widget-Based Application	68
<i>Yung-Wei Kao, Chia-Feng Lin, Kuei-An Yang, and Shyan-Ming Yuan</i>	
A Performance Analysis of Deflection Routing and FDLs with Wavelength-Based QoS in OBS Networks	72
<i>Dang Thanh Chuong, Vu Duy Loi, and Vo Viet Minh Nhat</i>	
Access Control for the Smart Meters Based on ABE	79
<i>Chengqun Yin and Ronggang Zhang</i>	
PCRLB-Based Cluster Selection for Target Tracking in Wireless Sensor Networks	83
<i>Zhigang Liu, Jinkuan Wang, and Han Wang</i>	
Aspect-Oriented Web Service Composition: A Petri Net Based Approach	88
<i>Deivamani Mallayya and Baskaran Ramachandran</i>	
On Achieving Robustness and Fairness in Call Admission Control for Voice Services within NGN Environment	96
<i>Chin-Ling Chen and Jia-Chun Wu</i>	
TDM: Time-Driven Mesh Overlay Network for Peer-to-Peer Video-on-Demand Services	100
<i>Hwang Kyu Choi, Yi-Qi Gui, Se-Hyun Seo, Choong-Hyo Ko, and Ju-Ha Seo</i>	
A Parallelized Network Traffic Classification Based on Hidden Markov Model	107
<i>Xuefeng Mu and Wenjun Wu</i>	
A Label Based Greedy Algorithm for Minimum Energy Consumption Multicast Routing in Ad Hoc Networks	113
<i>Lin Lin and Qiwu Wu</i>	
Multi-metric Opportunistic Routing for VANETs in Urban Scenario	118
<i>Qi Chen, Nan Cheng, Xinhong Wang, and Fuqiang Liu</i>	

Session 3: Quality of Service and User Experience

A QoS Approach for Detecting and Managing a Fault Alarm Storm	123
<i>Jian Yang, Li Li, Su-Bin Shen, and Charlie Chen-Yui Yang</i>	
Automatic Fine-Grained Transaction Categorization for Multi-tier Applications	130
<i>Zhen Zhang and Shanping Li</i>	

Constructing a Cloud-Centric Service Assurance Platform for Computing as a Service	139
<i>Jun-Yan Hu, Chun-Hung Wu, Chia-Chen Chu, Kuan-Hsiung Liang, Hey-Chyi Young, Yung-Yi Hsu, Chung-Hua Hu, and Huan-Guo Lin</i>	
Internet Service Delivery Models: Evolution and Current Issues	146
<i>Pana Flavius and Put Ferdi</i>	
LTE CoS/QoS Harmonization Emulator	154
<i>Li Li, Subin Shen, and Charlie Chen-Yui Yang</i>	
Performance Monitoring with Predictive QoS Analysis of LTE Backhaul	162
<i>Charlie Chen-Yui Yang, Michael Ketcham, David Lu, and David Kinsey</i>	
QoS and Traffic Management for CDMA Network	170
<i>Fengyi Yang and Xiaodong Lu</i>	
QoS by Multiple Cluster Head Gateway Approach in Mobile Ad Hoc Network	174
<i>Ahmad Anzar, Husain Shahnwaz, and Gupta S.C.</i>	
QoS Evaluation of HTTP over Satellites	177
<i>Lukman Audah, Zhili Sun, and Haitham Cruickshank</i>	
QoS Guarantee in Tomcat Web Server: A Feedback Control Approach	183
<i>Jianbo Lu, Guangzhong Dai, Dejun Mu, Jiang Yu, and Haipeng Li</i>	
QoS Management in Cloud@Home Infrastructures	190
<i>Salvatore Distefano, Antonio Puliafito, Massimiliano Rak, Salvatore Venticinque, Umberto Villano, Antonio Cuomo, Giuseppe Di Modica, and Orazio Tomarchio</i>	
QoS Monitoring and Troubleshooting of a Large Scale IPTV Deployment	198
<i>Xidong Wu, Zhengye Liu, Yali Liu, Menglin Liu, Charlie Chen-Yui Yang, and Jin Wang</i>	

Session 4: System Management, Configuration, and Performance

Network Calculus for the Validation of Automotive Ethernet In-vehicle Network Configurations	206
<i>Martin Manderscheid and Falk Langer</i>	
Recognizing and Embedding Outerplanar Distributed Computer Networks	212
<i>Yung H. Tsin</i>	
The GPU Enhanced Parallel Computing for Large Scale Data Clustering	220
<i>Xiaohui Cui, Jesse St. Charles, and Thomas E. Potok</i>	
The Performance Study on Several Distributed File Systems	226
<i>Songlin Bai and Hao Wu</i>	
Unknown Word Recognition Based on Maximal Cliques	230
<i>Hao Chen, Bo Xiao, and ZhiQing Lin</i>	

IPTV System Design: An ISP's Perspective	234
<i>Yali Liu, Zhengye Liu, Xidong Wu, Jin Wang, and Charlie Chen-Yui Yang</i>	
Performance Evaluation of Fast Fourier Transform Application on Heterogeneous Platforms	241
<i>Xiaojun Li, Yang Gao, and Ying Liu</i>	
Accelerating 3-DES Performance Using GPU	250
<i>Hsiu-Pang Yeh, Yue-Shan Chang, Chia-Feng Lin, and Shyan-Ming Yuan</i>	

Session 5: Authentication, Key, Privacy and Reliability

A Simplified Solution of a PEPA Model of Kerberos Protocol	257
<i>Yishi Zhao and Nigel Thomas</i>	
An Improved Solution of SOM Network Anomaly Detection Based on T-Distribution	265
<i>Chen Weijun and Li Xiao</i>	
Controllable Privacy Preserving Search Based on Symmetric Predicate Encryption in Cloud Storage	269
<i>Chun-I Fan and Shi-Yuan Huang</i>	
Cyber Security Concerns for Ubiquitous/Pervasive Computing Environments	274
<i>Jessie J. Walker, Travis Jones, Mansour Mortazavi, and Roy Blount</i>	
Is Fuzzy Vault Scheme Very Effective for Key Binding in Biometric Cryptosystems?	279
<i>Hailun Liu, Dongmei Sun, Ke Xiong, and Zhengding Qiu</i>	
Physical Access Control Based on QR Code	285
<i>Yung-Wei Kao, Guo-Heng Luo, Hsien-Tang Lin, Yu-Kai Huang, and Shyan-Ming Yuan</i>	
Using Algebraic Signatures for Remote Data Possession Checking	289
<i>Lanxiang Chen</i>	

Session 6: Algorithm, Architecture and System

A New Parallel Successive Overrelaxation Iterative Algorithm for Poisson Equation	295
<i>Qiu-Yan Xu</i>	
Generalized Laguerre Function-Generalized Hermite Function Mixed Approximation and Its Application	301
<i>Xiao-yong Zhang, T. Chaoluis, and Jiang Hua Sui</i>	
A New Method Based on Kalman Filtering Theory for Solving Two Point Boundary Value Problems	309
<i>Zhaohui Dang and Yulin Zhang</i>	

Ad Hoc Aggregation Query Processing Algorithms Based on Bit-Store in Data Intensive Cloud	313
<i>Donghua Yang, Jianzhong Li, Xixian Han, and Jinbao Wang</i>	
Dynamic Threshold-Based Energy Efficient Scheduling Algorithm for Parallel Tasks on Homogeneous DVS-Enabled Clusters	321
<i>Wei Liu, Hang Yin, and Wei Du</i>	
Energy-Based Cluster-Head Inheritance Algorithm for Wireless Sensor Networks	329
<i>Rong Ding, Haiying Du, and Bing Yang</i>	
Exploiting Cloud Computing for Algorithm Development	336
<i>Neil S. O'Brien, Steven J. Johnston, Elizabeth E. Hart, Kamal Djidjeli, and Simon J. Cox</i>	
Improving the Task Stealing in Intel Threading Building Blocks	343
<i>Shiyi Lu and Qing Li</i>	
One Method for Provenance Tracking of Product Lifecycle Data in Collaborative Service Environment	347
<i>Ren Genquan, Zhang Li, Wang Jianmin, and Liu Yinbo</i>	
Unbiased Sampling of Bipartite Graph	357
<i>Jing Wang and Yuchun Guo</i>	

Session 7: Design, Implementation, and System Management

An Approach to Improving Trust Estimation in Service-Based Systems	361
<i>Stephen S. Yau and Peng Sun</i>	
A Reutilization Model for High Utilization and Low Delay Time Properties on Streaming Servers	368
<i>Yung-Chiao Chen, Chang-Hsu Chen, Chuan-Ching Sue, and Wei-Zhi Chen</i>	
Extending Work Queue of HCA Endpoint Using Software Work Queue Approach: Experimental Evaluation with uDAPL	376
<i>Jasjit Singh, Eva Mishra, and Yogeshwar Sonawane</i>	
Hybrid File System Using NAND-Flash SSD	380
<i>Jaechun No</i>	
Research on Online Failure Prediction Model and Status Pretreatment Method for Exascale System	386
<i>Hao Zhou and Yanhuang Jiang</i>	
Task Migration for Energy Conservation in Real-Time Multi-processor Embedded Systems	393
<i>Hwang-Cheng Wang and Cheng-Wen Yao</i>	
VisualDB: Managing and Publishing Scientific Data on the Web	399
<i>Zhihong Shen, Jianhui Li, Chengzan Li, Xing He, and Xianming Su</i>	

A New Post-Filter for Removing the Edge Ringing Artifacts in Deconvolution Images	405
---	-----

Bo-Xin Zuo and Xiang-yun Hu

A PDE-Based Perceptual Deconvolution Image Edge Ringing Artifact Metric	408
---	-----

Bo-Xin Zuo and Xiang-yun Hu

Application of Multimedia Network Supported by Constructivism in the Teaching of College English Listening and Speaking	412
---	-----

Han Zhongqiang

Session 8: Cloud Computing

A Family of Heuristics for Agent-Based Cloud Bag-of-Tasks Scheduling	416
--	-----

J. Octavio Gutierrez-Garcia and Kwang Mong Sim

A Framework for a University Display Platform by Using Cloud Computing	424
--	-----

Zhen-heng Liu, Chang-li Zhang, and Tim Reynolds

A Metadata Based Storage Model for Securing Data in Cloud Environment	429
---	-----

Subashini S and Kavitha V

Charging Model Research of Infrastructure Layer in Cloud Computing Based on Cost-Profit Petri Net	435
---	-----

Lirui Bai, Tong Li, Xinjun Wu, and Zhongwen Xie

Cloud Computing Model without Resource Management Center	442
--	-----

Zongheng Liu, Weiqin Tong, Zhixun Gong, Jianhua Liu, Yue Hu, and Shaojie Guo

Load-Balancing Tactics in Cloud	447
---------------------------------------	-----

Rich Lee and Bingchiang Jeng

Opportunities and Challenges in Running Scientific Workflows on the Cloud	455
---	-----

Yong Zhao, Xubo Fei, Ioan Raicu, and Shiyong Lu

Proxy-Based Cloud Resource Sharing	463
--	-----

D. Cenk Erdil

The Study and Methods for Cloud Based CDN	469
---	-----

Chia-Feng Lin, Muh-Chyi Leu, Chih-Wei Chang, and Shyan-Ming Yuan

Towards Deploying Elastic Hadoop in the Cloud	476
---	-----

Hong Mao, Zhenzhong Zhang, Bin Zhao, Limin Xiao, and Li Ruan

Towards Agents and Ontology for Cloud Service Discovery	483
---	-----

Jaeyong Kang and Kwang Mong Sim

Session 9: Cognitive Radio

A Trust Management Model in Centralized Cognitive Radio Networks	491
--	-----

Qingqi Pei, Rui Liang, and Hongning Li

Frequency Allocation in Dynamic Environment of Cognitive Radio Networks Based on Stochastic Game	497
<i>Xin Liu, Jinlong Wang, Qihui Wu, and Yang Yang</i>	
Spectrum Sharing Models in Cognitive Radio Networks	503
<i>Helena Rifà-Pous and Josep Rifà</i>	
Stable-Aware Traffic Assignment for Multi-path Routing in Cognitive Radio Ad Hoc Networks	511
<i>Lin Lin and Ji Tian</i>	
Self-Organize Network Architecture for Multi-agent Cognitive Radio Systems	515
<i>Qi Zhao, Shi Qin, and Zhijie Wu</i>	
Mitigating Interference for MIMO Communication System	519
<i>Qinghua Ren, Yi Zhang, and Zhenyong Chu</i>	
Orthogonal Space-Time Codes Based Signal Constellations for MIMO System	523
<i>Md. Zahangir Alom, Hyo Jong Lee, Khan Md. Hashem Ali, and M.H. Lee</i>	
Non-Bayesian Learning of Channel Sensing Order for Dynamic Spectrum Access Networks	529
<i>Bowen Li, Panlong Yang, Jinlong Wang, Qihui Wu, and Nan Xia</i>	
A Noise-Robust EASI Algorithm for Noisy Blind Interference-Signal Separation	535
<i>Yu-ling Duan and Hang Zhang</i>	

Session 10: Healthcare Computing and Application

A 12T Subthreshold SRAM Bit-Cell for Medical Device Application	540
<i>Hu Chen, Yang Jun, Zhang Meng, and Wu Xulong</i>	
A Web-Based HD Telemedicine System for Remote Psychotherapy	544
<i>Ling Li, Hua Yang, Hang Su, Yihua Cao, and Shibao Zheng</i>	
An Approach to Explain the Human Hyper-acuity: Applied to THz Imaging	551
<i>Oier Dominguez, Juan Lizarraga, and Carlos del-Río</i>	
Automatic Generation of Query Order Execution Plan for Hybrid Mediator with Medical Sources	558
<i>Cherrat Loubna, Ezziyyani Mostafa, and Essaïdi Mohammed</i>	
E-Health Transformation Model in Serbia: Design, Architecture and Developing	566
<i>Miljan Vučetić, Ana Uzelac, and Nenad Gligorić</i>	
Individual Self-Service Electronic Health Records: Architecture, Key Technologies and Prototype System	574
<i>Weiwei Jiang, Haishun Wang, Xiaomei Xu, and Chun Peng</i>	
Modeling the Management of Electronic Health Records in Healthcare Information Systems	580
<i>Peter H. Chang</i>	

Performance Evaluation of Scheduling Policies in a Smart Hospital Environment	585
<i>Xiao Chen, Nigel Thomas, and Michael Harrison</i>	
Simulation Modeling and Analysis of a Multi-resource Medical Clinic	593
<i>Bo Sun, Gerald W. Evans, and Lihui Bai</i>	
Using UICDS to Share Data in the Real-Time Decision Support System for Pandemic Response	601
<i>Robert Kelley, Aman Gupta, Anup Kumar, and Sunderesh Heragu</i>	
Author Index	606