

Proceedings

**2008 Japan-China Joint Workshop on
Frontier of Computer Science and Technology
FCST 2008**

**27-28 December 2008
Nagasaki, Japan**



Los Alamitos, California
Washington • Tokyo



TABLE OF CONTENTS

NETWORKING AND SECURITY

Survey of Security Requirements, Attacks and Network Integration in Wireless Mesh Networks	1
<i>Hassen Redwan, Ki-Hyung Kim</i>	
Privacy-Preserving Practical Convex Hulls Protocol	8
<i>Youwen Zhu, Liusheng Huang, Wei Yang, Zhili Chen, Lingjun Li, Zhenshan Yu, Yonglong Luo</i>	
A Practical Three-Dimensional Privacy-Preserving Approximate Convex Hulls Protocol	15
<i>Dong Li, Liusheng Huang, Wei Yang, Youwen Zhu, Yonglong Luo, Zhili Chen, Lingjun Li, Yun Ye</i>	
Dynamic Spectrum Allocation MAC Protocol Based on Cognitive Radio for QoS Support	22
<i>Inwhee Joe, Seonbong Son</i>	
An Energy Efficient Weight-Clustering Algorithm in Wireless Sensor Networks	28
<i>Lu Cheng, Depei Qian, Weiguo Wu</i>	
Tracking and Repairing Damaged Databases Using Before Image Table	34
<i>Meiyi Xie, Hong Zhu, Yucui Feng, Guanrong Hu</i>	
Access Graph Based Risk Assessment Model for Network Information System	40
<i>Huan Wang, Gendu Zhang</i>	

SOFTWARE ENGINEERING AND PROGRAMMING LANGUAGES

A Distributed Workflow Management System Model and Its Scheduling Algorithm	47
<i>Ding Changsong, Hu Zhoujun, Hu Zhigang, Li Xi</i>	
Evolutionary Testing of Unstructured Programs Using a Testability Transformation Approach	55
<i>Sheng Jiang, Yansheng Lu</i>	
MP-Templates Operating Toolkit in Movie-Based Programming	63
<i>Dmitry Vazhenin, Alexander Vazhenin</i>	
Design of General User Interface for Automatic Web Service Composition	71
<i>Haruhiko Takada, Incheon Paik</i>	
Spatial Data Compression Techniques for GML	75
<i>Yuzhen Li, Takashi Imaizumi, Jihong Guan</i>	

STORAGE SYSTEM AND TECHNOLOGY

An Energy Efficient, Low Cost, Hybrid Storage System Based on Utility	81
<i>Lingfang Zeng, Dan Feng, Bharadwaj Veeravalli, Qingsong Wei</i>	
TSPSCDP: A Time-Stamp Continuous Data Protection Approach Based on Pipeline Strategy	90
<i>Jingning Liu, Tianming Yang, Zuoheng Li, Ke Zhou</i>	
Study and Optimize the Process of Batch Small Files Replication	97
<i>Liang Xiao, Qiang Cao, Changsheng Xie, Chuanwen Wu</i>	

A Duplicate-Aware Data Replication	106
<i>Zhu Jianfeng, Qin Leihua, Zeng Dong, Zhou Jinli</i>	

SEMANTIC COMPUTING

A Novel Hybrid System for Large-Scale Chinese Text Classification Problem	112
<i>Zhong Gao, Guanming Lu, Daquan Gu</i>	
An Approach to Implementing an Intelligent Web Search	116
<i>Vitaly Klyuev</i>	
A Schema Matching Method Based on Partial Functional Dependencies	122
<i>Li Guo-Hui, Du Xiao-Kun, Hu Fang-Xiao, Du Jian-Qiang</i>	
The Axiomatic Semantics of PDFD	130
<i>Gao Xiaolei, Huaikou Miao</i>	

VIRTUALIZATION AND MULTIMEDIA TECHNOLOGY

XenLR: Xen-based Logging for Deterministic Replay	138
<i>Haikun Liu, Hai Jin, Xiaofei Liao, Zhengqiu Pan</i>	
VNIX: Managing Virtual Machines on Clusters	144
<i>Xuanhua Shi, Haoyu Tan, Song Wu, Hai Jin</i>	
Hand Tracking by Particle Filtering with Elite Particles Mean Shift	152
<i>Shengtong Zhong, Fei Hao</i>	
A New Technique of Modeling Acoustic Echo and its Implementation Using FPGA	157
<i>Amin Mohamed Nassar, Ashraf Mohamed Ali</i>	
Content Visibility in Video Recommender Systems	170
<i>Nalin Chakoo, Rahul Gupta, Jayaprada Hiremath</i>	
Optimizing Two-Dimensional Continuous Dynamic Programming for Cell Broadband Engine Processors	175
<i>Takahiro Machino, Shin-ya Iwazaki, Yuichi Okuyama, Junji Kitamichi, Ken-ichi Kuroda, Ryuichi Oka</i>	

PATTERN RECOGNITION AND VIRTUALIZATION TECHNOLOGY

Economical Solution for an Easy to Use Interactive Whiteboard	183
<i>Zhixun Wang, James Louey</i>	
A Segment Extraction Algorithm Based on Polygonal Approximation for On-Line Chinese Character Recognition	190
<i>Xinqiao Lu, Xiaojuan Liu, Guoqiang Xiao, Enmin Song, Ping Li, Qiaoling Luo</i>	
An Invariant Pattern Recognition System Using the Bayesian Inference on Hierarchical Sequences with Pre-processing	194
<i>Zunyi Tang, Wenlong Liu, Shuxue Ding</i>	
Head Pose Recognition with NNC-Trees	200
<i>Jie Ji, Kei Sato, Naoki Tominaga, Qiangfu Zhao</i>	
Inducing NNTrees Suitable for Hardware Implementation	206
<i>Hiroto Hayashi, Qiangfu Zhao</i>	

Author Index