

2010 International Conference on Multimedia Communications

(Mediacom 2010)

Hong Kong
7 – 8 August 2010



IEEE Catalog Number: CFP1047K-PRT
ISBN: 978-1-4244-7774-6

2010 International Conference on Multimedia Communications

Mediacom 2010

Table of Contents

Message from General Co-chair	x
Organizing Committee	xi
Reviewers	xii

Mediacom 2010

The Set-Up of System of ISDN-based Remote Video Teaching and Conferencing in Sign Language for the Deaf	3
<i>Lu Cailing and Hanmei</i>	
The Development and Design of the Student Management System Based on the Network Environment	5
<i>Zhi-gang Yue and You-wei Jin</i>	
A Novel Image Denoising Algorithm Based on Non-uniform Rectangular Partition and Interpolation	9
<i>KinTak U, Xiaoyu He, Bo Yang, Dongxu Qi, and Zesheng Tang</i>	
A View of Support Vector Machines Algorithm on Classification Problems	13
<i>Ranzhe Jing and Yong Zhang</i>	
Energy-Performance Trade-Off for Multi-core Embedded Systems	17
<i>Yong Yao, Yingfeng Wang, and Zhijing Liu</i>	
Constructing Knowledge Management System in E-business Enterprises	20
<i>Ranzhe Jing</i>	
A Novel Image Encryption Algorithm Based on Fractional Fourier Transform and Chaotic System	24
<i>Jinhui Lai, Song Liang, and Delong Cui</i>	
Role of Path Editing Based on 3D Motion	28
<i>ZhiJun Zheng</i>	
Design of Intelligent Monitoring System for Greenhouse	31
<i>Shiyong Ma</i>	
A New Method of Bridge Target Detection on ASAR Imagery	35
<i>Hui He and Kun Liu</i>	

Firework Simulation Based on Particle System in Virtual Scene	39
<i>Wensheng Dong, Xinyan Zhang, and Caijun Zhang</i>	
Smoke Simulation Based on Particle System in Virtual Environments	42
<i>Wensheng Dong, Xinyan Zhang, and Caijun Zhang</i>	
Fuzzy Comprehensive Evaluation of Civil Aviation Safety Supervisor	45
<i>Fang Chen</i>	
Regular Abstract of Concept Lattice in Network Communication	49
<i>Ma Yuan, Liu Zhangang, and Zhou Chengyi</i>	
The Compiler-Based Heterogeneous Multi-core Structure	53
<i>Jijie Zheng and Xianjie Wu</i>	
Improving Shieh-Lin-Yang-Sun Signature Scheme	57
<i>Zhong Chen, Chenglian Liu, and Na Wang</i>	
Generation of Cloud Image Based on Perlin Noise	61
<i>Wensheng Dong, Xinyan Zhang, and Caijun Zhang</i>	
An Improvement of Generalized Key Agreement and Password Authentication Protocol	64
<i>Luxiong Xu, Na Wang, and Chenglian Liu</i>	
Network Virtualization for Emergency Management Services	67
<i>Chandrasekaran Subramaniam, Jayanthi Gokulakrishnan, Jitendra Kumar Jain D, and Mohan Bharathy U</i>	
A Novel Spectrum Utilization Method for Cognitive Radio Applications	71
<i>Mudan Gong and Ronghui Guo</i>	
Scene Classification via Hierarchical Semantic Blockes Vote Model	75
<i>Yuxin Wang, Zhen Feng, He Guo, Zhisen Ren, and Qi Jia</i>	
Tree-RNSA: A Negative Selection Algorithm Based on Self Index Tree	79
<i>Wen Chen, Tao Li, Yuanquan Shi, and Yanming Fu</i>	
Latent Palmprint Image Segmentation Based on Dissimilarity Tolerance	83
<i>Yuyang Zhou, Tiande Guo, Min Wu, and Tong Zhao</i>	
Algorithm Research of RBF Neural Network Based on Improved PSO	87
<i>Hui Li, Min Cai, and Zhen-Yu Xia</i>	
An Improved Foreground Object Detection Method Based on Gaussian Mixture Models	90
<i>Xiayi Zhang, Fuqiang Liu, and Zhipeng Li</i>	
The Difference of Electrostatic Energy between Uniformly Charged Spherical Surface and Sphere	94
<i>Xiang Qi</i>	
On the Tracking Range of the Emitter Follower	97
<i>Xiang Qi</i>	
Potential Energy Theory Based on Image Processing	100
<i>Xuesong Chen, Cheng Wang, Xuejun Xu, Hongbo Zhu, and Shaohua Jiang</i>	

Function Modular Design of the DES Encryption System Based on Reversible Logic Gates	104
<i>Yiqing Zhang, Zhijin Guan, and Zhilang Nie</i>	
A Scene Complexity Adaptive Intra-frame Rate Control for Video Coding	108
<i>Zhiping Jiang, Qingguang Dai, and Yunfeng Ai</i>	
Design of Portal-Based Uniform Identity Authentication System in Campus Network	112
<i>Wei Wang, Shengzhong Yuan, and Hong He</i>	
Parallel Ant Colony Algorithm for the Logistics Scheduling Problem	116
<i>Yan Fang and Liu Bing Wu</i>	
A Multi-next Hop Routing Algorithm Based on Spanning Tree	120
<i>Bu Youjun, Wang Binqiang, Guo Hong, and Hu Hongchao</i>	
Dynamic Face Fatigue Detection Based on Feature-Lever Fusion	123
<i>Bing Lu, Yanfeng Sun, and Lichun Wang</i>	
Single-Image Super-Resolution Based on Decomposition and Sparse Representation	127
<i>Guodong Jing, Yunhui Shi, and Bing Lu</i>	
The Research on Evaluation System Based on Virtual Simulation Experiment	131
<i>Xiang Liu, Yongjiang Zhong, Haijing Qi, and Hongyan Tao</i>	
Applying Acoustic Analysis to Video Segmentation	135
<i>Shilin Zhang and Mei Gu</i>	
A Compact Open Slot Antenna with Dual Notched Bands for UWB Application	139
<i>Ming Su, Yuanan Liu, Shulan Li, Cuiping Yu, and Xin Liu</i>	
Efficient Video Encryption by Image Key Based on Hyper-chaos System	141
<i>Vahid Alirezaei and Mehdi Yaghbi</i>	
Research of Image Retrieval Based on Feedback Mechanism	145
<i>Zhao Yang</i>	
Fuzzy Adaptive PID Control Tank Level	149
<i>Qianhua Xiao, Deqiong Zou, and Ping Wei</i>	
A Survey of Rendering of Chinese Painting	153
<i>Cao Yi and Wang Zhengxuan</i>	
Design and Realization of Wireless Home Gateway Based on 3G and ZigBee	157
<i>Shuang Wu and Gui-gen Zeng</i>	
Teaching Design on Photography Course under Multimedia Environment	161
<i>Yan-feng Liang, Chao-zheng Yang, and Shu-ying Li</i>	
An Novel Initial Radius Scheme of Sphere Decoding in MIMO System	164
<i>Song Yang, Li Jianping, and Cai Chaoshi</i>	

Searcher and Application of Multifractal Generated Dimensional by Strict Decreasing Fractal	168
<i>Dahui Li and Ming Diao</i>	
Fractal Analysis for Industry Surface Based on Wavelet Filter	172
<i>Zheng Ying, Li Dahui, and Gao Sijia</i>	
The Application of Estimation Method Based on Improved Wavelet Coefficients for Image Denoising	175
<i>Han Jinku and Li Dahui</i>	
An Intelligent Agent System for Borrower's Recommendation in P2P Lending	179
<i>Wu Jinghua and Fu Rong</i>	
A Manufacturing System Based on Virtual Reality	183
<i>Zhang Zhan, Wang Dahu, Liu Huan, Huang Keming, and Zhang Tong</i>	
A Hierarchical Clustering Algorithm Based on Grid Partition	187
<i>Hongbin Zhao, Qilong Han, and Haiwei Pan</i>	
Electromagnetic Field Probe Based on Fiber Optic Communication	191
<i>Jincai Lin, Chao Fang, Guangchao Zhu, and Yuanteng Wang</i>	
TCP-Equivalent Window-Averaging Rate Control Scheme	194
<i>Byung-Seok Kang</i>	
Passenger Flow Direction Detection for Public Transportation Based on Video	198
<i>Chongwen Wang and Meijie Tian</i>	
Secure Cooperative Spectrum Trading in Cognitive Radio Networks: A Reversed Stackelberg Approach	202
<i>Yali Zhu, Di Suo, and Zehua Gao</i>	
Malicious Code Detection by Taint Analysis	206
<i>Zhang Zhigang and Guo Fan</i>	
A Scan Statistics Based Suspicious Transactions Detection Model for Anti-money Laundering (AML) in Financial Institutions	210
<i>Xuan Liu and Pengzhu Zhang</i>	
System Tolerance Oriented Network Security Situational Assessment	214
<i>Yanming Fu, Wen Chen, Rui Sun, and Yuanquan Shi</i>	
A Forecast Approach of Network Security Situation Base on Optimal Fuzzy Grey	218
<i>Yanming Fu, Yuanquan Shi, Ali Mu, and Wen Chen</i>	
Design of a Image Acquisition System with High Dynamic Range	222
<i>Liang Hui Hui and Xu Xiao</i>	
Frame Rate Adaptive Rate Model for Video Rate Control	226
<i>Junhui Hou, Shuai Wan, and Fuzheng Yang</i>	

Research about Authentication and Data Security Based on Media System	230
<i>Jiang Guo-song and Yu Zhi-chao</i>	
A Novel Multimedia Networks Services Architecture	234
<i>Jiagtao Yu</i>	
An Algorithm Used to Improve Task Parallelization for Directed Acyclic Graphs	238
<i>Yong Yao, Yingfeng Wang, and Zhijing Liu</i>	
Real-Time Facial Sketch Synthesis from Video	241
<i>Xiaoping Chen, Si Ye, Weiping Sun, and Shengsheng Yu</i>	
Conception on Management of CD Attached with Books under Sharing Trend	245
<i>Zhijiang Yang and Huilian Ni</i>	
The Shock Isolation System Optimum Design Based on Pseudo-parallel Improved Genetic Algorithm	247
<i>Qinming Tan, ZhiYuan Yang, Wenzheng Shao, and Yao Yu</i>	
The Real-Time Speed Measurement System by Cross-Correlation Method Based on Digital Signal Processor	251
<i>Xiaojie Liu, Yi Lu, and Yinsheng Luo</i>	
Efficient Strategies for Average Constraint-Based Sequential Pattern Mining	254
<i>Jing Chen, Junzhong Gu, Jing Yang, and Zhefeng Qiao</i>	
Simulation and Evaluation for the Emergency Management under the Situation of Fatal Disaster	258
<i>Yanyan Huang, Jianyu Wang, Rong Jiang, Mei Liu, and Lei Dong</i>	
A Novel Multi Agent System Dynamic Cooperation & Automated Negotiation Model	263
<i>Xu Yuhui and Zhong Gang</i>	
Current Research of Students in the Network Learning	267
<i>Zhang Gannian and Fan Qing</i>	
Discovery of Interesting Association Rules Based on Web Usage Mining	272
<i>Huiping Peng</i>	
The Design of CPU Multi-core Structure	276
<i>Jijie Zheng</i>	
Author Index	280