IET International Communication Conference on Wireless Mobile and Computing 2011

(CCWMC 2011)

IET Conference Publications 589

Shanghai, China
14-16 November 2011

ISBN: 978-1-61839-957-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by the Institution of Engineering and Technology
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact the Institution of Engineering and Technology
at the address below.

Institution of Engineering and Technology
P. O. Box 96
Stevenage, Hertfordshire
U.K. SG1 2SD

Phone: 01-441-438-767-328-328
Fax: 01-441-438-767-328-375

www.theiet.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Study of Millimetre-wave Generation based on Optical Frequency Multiplication 1
Yan Ding, Jun Zhu, Wei-Dong Fang, Xiao-Guang Ge, Xiang Chen

Blind SNR Estimation for MIMO-OFDM System 6
Shunli Hong, Youming Li, Yao Gao, Jianding Yu

Combined Multi-stage MMSE and ML Multiuser Detection for Underdetermined MIMO Systems 10
Kai Liu, S.S. Xing

Analysis and Comparison of GNSS Code Tracking with Different Discriminators 15
X. Zhang, H.L. Xu, X.Q. Zhan

Optimal Quantization for DC Coefficient of Wyner-Ziv Frame in Unidirectional Distributed Video Coding 20
Liu Jing, Liu Haixiao, Song Bin, Qin Hao

DOA Estimation in MIMO Radar based on Coherent Signal-subspace Method [Signal Read Signal] 25
Guodong Qin, Baixiao Chen

A New Motion Estimation Algorithm based on Space Relation for Frame Rate up Conversion 29
Xuewei Chen, Chunchun Chen, E. Yang

Detecting Pathological Speech using Adaptive Chaos Exponent 33
Jun He, Yan-Xiong Li, Qian-Hua He, Fen Chen, Xue-Yuan Zhang

Complexity Analysis of Algorithm/Architecture Co-design for H.264 Deblocking Filter in MPSoC Design 38
Fang Zhu, Feiling Chen

Practical Design of Multi-channel Oversampled Warped Cosine-modulated Filter Banks 44
M.I. Vashkevich, W. Wan, A.A. Petrovsky

A New Mobile Single Observation Passive Location Algorithm 50
Li Hua, Liu Kai

A Novel 8×8 Transform Method Applied in Video Coding 54
Wu Cheng, Haiwu Zhao, Guoping Li, Guowei Teng, Guozhong Wang, Tao Fan, Hongbo Zhu

Effective Camera Calibration in Free-viewpoint Systems 60
Liu Liliang, An Ping, Zheng Zhuan, Zhang Zhaoyang

A De-noising Method for Heart Sound Signal using Otsu's Threshold Selection 65
Haoyu Chen, R. Gururajan

Fast Seam Carving based on Direction Map 70
Huan Du, Zhi Liu, Yinzhu Xue, Ran Shi

Third-order Carrier PLL Design and Analysis for High Dynamic Performance 76
Pei Jun, Hu Zheng-qun

Eigen-based Dictionary for Ultra-wideband Compressed Sensing 80
Xueting Li, Deqiang Wang, Xinghua Zhang, Weihao Wang

RFID-based Real Time Location and Safety Management System 85
Jian Yin, Ye Yin, Jianwei Wang, Xiangnong Wu, Chuanjiang Li

A Dynamic Loading Mechanism for Large Scale 3D Visualization 89
Xiang Li, Wanggen Wan, Rui Wang, Yangyang Jia, Ke Lu

Audio Fingerprinting based on Harmonic Enhancement and Spectral Subband Centroid 93
Jijun Deng, Wanggen Wan, XiaoQing Yu, Xueqian Pan, Wei Yang

Research on Model Correction based on Scattered Point Cloud data Surface Reconstruction 97
Hui Li, Xiuli Ma, Jinbo Li, Yanan Wang

An Adaptive Synchronization Algorithm for Non-contiguous OFDM Cognitive Radio Systems 102
Xiao Zhou, Runhe Qiu

Orthogonal Space-time Block Codes in MIMO-OFDM Cognitive Radio Communication System 107
Xiaoli Yu, Runhe Qiu

Research on Time Synchronization of Class B LXI bus 112
Hui Shen, Yutian Feng, Gang Tan

GPU-based Background Generation Method 117
Xu Zhang, Bowei Wang, Chenyao Geng

Adaptive Weighted Algorithm of Cooperative Spectrum Sensing in Cognitive Radio Networks 121
Liu Chuan-qing, Wang Zhi-ming

Multiple View Learning based on Tabular Data 127
Zhe Wang, Zengxin Niu, Jianhua Huang, Daqi Gao

Efficient Resource Allocation in Cooperative Cognitive Radio Networks: A Coalitional Game Approach 133
Song-Wen Huang, Yu-Wei Chan, Feng-Tsun Orien, Yeh-Ching Chung
Local Transparency Technique for Heart Model from VTK 139
Yanan Wang, Wanggen Wan, Xueli Zhou, Shuiling Mao, Hui Li
Bandwidth-efficient Contention-free Mechanism for Wireless Networks 143
Qian Liu, Jing Tu, Yongxin Yan, K.K. Chai
A Game Theoretical Approach of Network Selection Algorithm in Heterogeneous Wireless Networks 148
Meirong Chen, Fan Li, Junqing Wang
Blending Two Parametric Curves on the Sphere 154
Zhenghua Zhou, Wanggen Wan
The Research and Application of Business-driven Internet Component Integration 159
Bao Wang, Hongming Cai, Lihong Jiang
A Novel OFDM-PON Architecture based on All-optical Waveform and Flat Frequency Comb Generation for 100 GB/S optical access 164
Peng Jiang, Yingxiong Song, Wenxuan Han, Lin Zhang
RFID Protocol based on Random Number and Encryption Hash 169
Qian Quan, Guo Xiang, Zhang Rui
Analysis of Multiple Shared Channel Cooperative Routing in OFDM based Wireless Networks 175
X. Chen, A.D.S. Jayalath, G. Munasinghe, K. Ziri-Castro
The Research of Suppressing Power Interference in PLCC using ICA Technology 181
Zeyu Wang, Shenglin Zhou
Semi-blind Channel Estimation of MIMO-OFDM Systems based on RBF Network 187
Hao jie, Yang ling
The bit Error Rate Performance of MPSK over Extended Rayleigh Fading Channel 192
Yingchun Li, Sixuan Tang, Xiaoguang Ge
Low Power Consumption Wireless Temperature and Humidity Monitoring Node based on MCF51QE128 196
Zhang Minghui, Qian Xiaolong, Chen Yejin
Interference Mitigation for Downlink base Station Cooperation with Joint Distributed Space-time Coding 201
Ting Ai, Zhuo Wu
Performance Analysis of UNB Modulation based on VMCK in AWGN Channel 207
Yang Liu, Zheng Guoxin, Li Yabin, Sun Xing
Ultra-wideband Bandpass Filter with Notch and Upper-band Suppression 211
H. Kuwamoto, Ruibing Dong, D. Kanemoto, R.K. Pokharel, H. Kanaya, K. Yoshida
A New Indoor Mobile Node Tracking Scheme based on RSSI and Kalman Filter 216
Liping Zhang, Yiping Chen
An Advanced Dynamic Spectrum Allocation Algorithm in Cognitive Radio based on Priority of Nodes 221
Dongying Xia, Runhe Qiu
A High Conversion Gain CMOS Current Bleeding Mixer for 2.4 G Wireless Communication 227
Wah Ching Lee, Yi Shen, Chiu Hoi Kuo, Kim Fung Tsang, Loi Lei Lai
A Cost Effective Multi-services WDM-PON Employing DPSK/FSK Orthogonally Modulated Downstream and OOK Remodulated Upstream 232
Wei Nai, Decun Dong
A Novel Design of WDM-PON Networking 237
Chenwei Wu, Chaoqin Gan, Xuejiao Ma, Dengfeng Yang
Signal Processing Techniques for Spectrum Oportunities and Iterference Detection in Cognitive Radio Networks 241
S.D. Borde, K.R. Joshi
Spectrum Sensing using Higher-order Statistics and Receive Diversity and Cooperative Detection in Simo Cognitive Radio System 247
L. Jin, Z. Hu
Weather Phenomenon Simulations in 3D Virtual Scenes based on OSG Particle System 254
Li Li, Wanggen Wan, Xiang Li, Zhi Wang
A RS and GIS Analysis on Land-use-cover Change of Shanghai 258
Xie Yanan, Wang Lishu, Wang Bo, Geng Hui
Mobile Augmented Reality System for Personal Museum Tour Guide Applications 262
Chen Jing, Guo Junwei, Wang Yongtian
Design of Millimeter-wave Bandpass Filter using Microstrip Stepped-impedance Stubs 266
Luhong Zhang, Xuexia Yang, Zaifeng Yang, Zhewang Ma

A Combined Interpolation Method for Waveform Reconstruction in Beacon Transmitter Detector 270
Gang Tan, Yutian Feng, Hui Shen
Speaker Retrieval Based on Minimum Distance in HCT 274
Ji-Chen Yang, Yan-Xiong Li, Xiao-Hui Feng, Qian-Hua He, Jun He
Research of OFDM Power Line Carrier Communication Based on AMI 278
Chen Xiang, Wu Runze, Cao Min
An Efficient Boundary Points Extraction Algorithm for Three-Dimensional Model Construction 282
Xueli Zhou, Wanggen Wan, Yanan Wang, Zhi Wang, Hui Li
The Rapid Lossless Compression of True Colour Image 286
Ximin Zhang, Wanggen Wan, Xueli Zhou, Junxing Ma
Research and Realization on the Ant Colony Optimization Algorithm 289
Xuzhi Wang, Yuanzheng Liu, Yangyang Jia
An Improved Spectral Subtraction Method in Compressed Domain 294
Liang Liu, Xiaoqing Yu, Wengen Wang, Yunhui Wang, Haifeng Yu
Audio Quality Evaluation Using Frequency Structural Similarity Measure 299
Chao Gan, Xiangyang Wang, Mengyao Zhu, Xiaoqing Yu
A Practical Method of Clock Synchronization in 2-Out-of-3 System 304
Si Li, Wanggen Wan, Lei Pan
The Interaction Between Heart and Catheter 307
Yangyang Jia, Xuzhi Wang, Xiuli Ma, Hui Li, Jinbo Li
Noise Reduction Based on Spectral Entropy in MP3 Compressed Domain 311
Xueqian Pan, Xiaoqing Yu, Wei Yang, Jijun Deng
Using Canny Algorithm in QEM Simplification for Textured 3D Models 315
Xinxin Li, Wanggen Wan, Lei Wang
Audio Classification Based on Fuzzy- Rough Nearest Neighbour Clustering 320
Wei Yang, Xiaoqing Yu, Jijun Deng, Xueqian Pan, Yunhui Wang
Designed and Implemented of Graphics Rasterization Algorithm with FPGA 325
Hengyong Jiang, Xunzhi Wang, Mengyao Zhu, Feng Guo
A FPGA Ray Tracing Scheme with Memory Optimization Facility 329
Huang Wei, Wan Wang Gen
A Spatial Hierarchy FPGA Implementation with DPR Square Root Partitions 335
Huang Wei, Wan Wang Gen
A Comprehensive FPGA Implementation of Collision Detection 341
Huang Wei, Wan Wang Gen
Email Encryption System Based on Hybrid AES and ECC 347
Chen JunLi, Qing Dinghu, Yu Haifeng, Zhang Hao, MeiJuan Nie
Audio Fingerprinting based on Local Energy Centroid 351
Xueqian Pan, Xiaoqing Yu, Jijun Deng, Wei Yang, Hongxue Wang
An FPGA-based MIMO-OFDM with Golden Decoding 355
Hao Zhang, Junli Chen, Wei Wu
Automatic Network Topology Discovery of EPON+EOC through SNMP 359
Jiashi Wang, Chunhua Wang, Weijie Fan
A Novel Ethernet over Coax Solution Employing Multi-point Control Protocol 363
Wang Chunhua, Li Li
Analysis of Modulator Impact Factors on Flat and Stable Optical Comb Generation based on Re-circulating Frequency Shifter for All-optical OFDM 367
Yingchun Li, Baojing Ni, Yingxiong Song, Lin Zhang, Jiajun Ye, Rujian Lin
Optical 16QAM Modulation based on DD-MZM in Radio-over-fiber System 371
Song Yingxiong, Chen Xiang, Li Yingchun
Dynamic Bandwidth Allocation using Prediction in WDM/TDM Passive Optical Network 375
Qiongling Shi, Chaoqin Gan, Xuejiao Ma, Dengfeng Yang
Computer Forensics in Communication Networks 379
Y.Q. Wang, M. Qi
Network-driven Dynamic Scheduling Algorithm for Large-Scale 3D Scene 384
Zhi Wang, Xiaoqing Yu, Ke Lu, Dinghu Qing
The Research of Audio Clustering with Gaussian Mixture Based on EM Algorithm 389
Yunhui Wang, Xiaoqing Yu, Wengen Wang, Liang Liu
An Application of High-Order Artificial Neural Network in Tax System 394
Shuiling Mao, Wanggen Wan, Yanan Wang, Zhi Wang, Xueqian Pan
Mesh Simplification Method Based on Vision Feature 398
Dinghu Qing, Junli Chen, Haifeng Yu, Zhi Wang

Urgency-based Packet Scheduling and Routing Algorithms for Video Transmission Over MANETs 403
Hyunchul Joo, Ki Jin An, Hwangjun Song
AD HOC Network Routing Mechanism for Intelligent Community 409
Weikang Wu, Hui Hong, Jun Yan
Weighted Centroid Location Algorithm in Wireless Sensor Network 414
Lixiong Tan, Fei Luo, Kai Liu
Reliable Data Transmission Against Packet Dropping Misbehavior In Wireless AD HOC Networks 419
Hung-Min Sun, Chiung-Hsun Chen, Ling-Chun Hsu, Yen-Hsueh Chen, Yao-Hsin Chen
Fault Isolation Using Self-Organizing Map (SOM) ANNS 425
Zhenyou Zhang, Kesheng Wang
Location Based Services with Personal Area Network for Community and Tourism Applications 432
M. Ros, M. D'Souza, A. Postula, I. MacColl
Improved UWB Pulse Shaping Method Based on Gaussian Derivatives 438
Li Li, Pei Wang, Xiao-dong Wu, Jiakai Zhang
Health Guard System with Emergency Call Based on Smartphone 443
P.P.K. Chiu, T.K.S. Lee, J.M.F. Cheng, Siu Tsz Yeung
LTE and Future Evolutions for the Benefits of Security Wireless Networks 447
J. Brouet, She Feng
Call Admission Control for Long Term Evolution 455
P.M. Tsang, K.F. Tsang, J.C.-K. Wong, H.Y. Tung
A Dual-band CMOS Low Noise Amplifier For Wireless Communication 461
Yi Shen, Chiu Hoi Kuo, Wah Ching Lee, Kim Fung Tsang, Loi Lei Lai
Analyzing Raim Performance for an MEO/GEO Hybrid GNSS Constellation 465
Hongliang Xu, Xin Zhang, Xingqun Zhan
An Enhanced Routing Mechanism Based on ZRP In AD HOC Networks 468
Tong Zhao, Qian Liu
A Bandwidth Ensured Two-Terminal Reliability Computation Method in Mobile AD HOC Network 472
Yiping Chen, Liping Zhang
Study of LOD Terrain Rendering Algorithm Based on GPU 476
Wei Xiong, Xuzhi Wang, Mengyao Zhu
Image-based 3D Models Reconstruction 482
Ke Lu, Xiangyang Wang, Zhi Wang, Xiang Li
A Low-power Temperature and Humidity Monitoring System base on WSN 486
J.J. Li, F. Wang
A Low Area Clipping Engine in 3D Graphics System 491
Liuchuang Gao, Mengyao Zhu, Xuzhi Wang
An Application of Improved Fuzzy C Means Clustering Algorithm in Tax Administration 496
Haifeng Yu, Junli Chen, Dinghu Qing, Shuiling Mao, Liang Liu
Online 3D Presentation System for Goods 500
Ke Lu, Zhi Wang, Xiang Li
A Hardware Implement of Phong Shader in 3D Graphics 503
Jianhua Xiao, Mengyao Zhu
Research and Design Of Network Control System and Controller based on ZigBee 508
Chongquan Zhong, Shudong Fu, Jingjing Ge, Zhichao Dong
A Survey of AEROMACS: Next Generation Airport Surface Mobile Communication Systems 513
Yiping Chen
An Improved DV-HOP Algorithm For Anisotropic Wireless Sensor Network 517
Qiaohe Yang, Huichang Shi
Design And Implementation of Environmental Monitoring System in Intelligent Home 522
Hui Hong, Weikang Wu, Kaiyuan Wang
Wideband Streaming Signal Analysis in PXI System 527
M. Leung
Author Index