

2014 Tenth International Conference on Intelligent Information Hiding and Multimedia Signal Processing

(IIH-MSP 2014)

**Kitakyushu, Japan
27-29 August 2014**



**IEEE Catalog Number: CFP14IIH-POD
ISBN: 978-1-4799-5391-2**

2014 Tenth International Conference on Intelligent Information Hiding and Multimedia Signal Processing

IIH-MSP 2014

Table of Contents

Preface	xxv
Organizing Committee	xxvi
Program Committee	xxviii
Sponsors	xxxii

Session 1: Cross-Discipline Techniques in Signal Processing and Networking

Design of Triple Symmetric Arms Dipole Antenna for 900/1800/2450 MHz Applications	1
<i>Yuh-Yih Lu, Jun-Yi Guo, and Hsiang-Cheh Huang</i>	
Error-Control for Compressed Sensing of Images with Multi-channel Transmission	5
<i>Hsiang-Cheh Huang, Ting-Hsuan Wang, and Feng-Cheng Chang</i>	
Analysis and Simulation of Theme Park Queuing System	9
<i>Liou Chu, Fu-Yi Hung, and Yen-Cheng Lu</i>	
Enhanced Difference Alteration with Weighted Averages for Reversible Data Hiding	13
<i>Hsiang-Cheh Huang, Chuan-Chang Lin, Yuh-Yih Lu, and Yueh-Hong Chen</i>	
Discussions on Implementing Iterative Hard Thresholding Algorithm	17
<i>Feng-Cheng Chang and Hsiang-Cheh Huang</i>	
Reversible Image Watermarking Based on Genetic Algorithm	21
<i>Yueh-Hong Chen and Hsiang-Cheh Huang</i>	

Session 2: Ergonomic Information and Control Systems

Data Glove Embedded with 6-DOF Inertial Sensors for Hand Rehabilitation	25
<i>Bor-Shing Lin, I-Jung Lee, Pei-Chi Hsiao, I-Jung Lee, Shu-Yu Yang, and Willy Chou</i>	
A Prototype Design of a Continuous and Real-Time Wireless Urine Monitoring System	29
<i>Yung-Tsung Cheng, Jiun-Hung Lin, and Cheng-Chi Tai</i>	
Design of Wearable Brain Computer Interface Based on Motor Imagery	33
<i>Chuan-Lung Lin, Tso-Yao Chu, Pei-Jung Wu, Chen-An Wang, and Bor-Shyh Lin</i>	
Wireless Surface Electromyography Monitoring System for Dysphagia Evaluation	37
<i>Chih-Jen Cheng, Chien-Zhi Ou, Zu-Po Yang, and Bor-Shyh Lin</i>	

Session 3: IPv6 Applications and Services

Building an IPv6 Virtual Lab with the Multi-level Training Mechanism	41
<i>Shian-Shyong Tseng, Ching-Heng Ku, Ai-Chin Lu, Jun-Ming Su, and Geng-Da Tsai</i>	
An Enhancement of IPv4-in-IPv6 Mechanism	45
<i>N. Chuangchunsong, S. Kamolphiwong, T. Kamolphiwong, and R. Elz</i>	
A Light-Weight Penetration Test Tool for IPv6 Threats	49
<i>Gu-Hsin Lai</i>	
The Implementation of IPv6-Enabled Locators for Location-Based Smart Marketing Service	53
<i>Tseng-Yi Chen, Fan-Hsun Tseng, Nen-Fu Huang, Wei-Kuan Shih, Han-Chieh Chao, and Li-Der Chou</i>	
Design and Implementation of Health Monitoring System for Solar Panel in IPv6 Network	57
<i>Wen-Yen Lin, Kuang-Po Hsueh, Wang-Hsin Hsu, Liew-Gha Yie, and Wei-Chen Tai</i>	
Ontology-Based Anti-threat Decision Support System for IPV4/IPV6	61
<i>Shian-Shyong Tseng, Jui-Feng Weng, Li-Ling Hu, and Hsu Nai-Wen</i>	

Session 4: Multimedia Services and Security

Robust Color Image Watermarking Approach Based on Shape-Specific Points	65
<i>Ching-Yu Yang and Wen-Fong Wang</i>	
A Reversible Data Hiding Method Using Inverse S-Scan Order and Histogram Shifting	69
<i>Yung-Chen Chou, Guo-Hao Huang, Huang-Ching Lee, and Ke-Jhen Lin</i>	
A Web API Aggregation Service for Mobile Mashup Applications	73
<i>Hung-Yu Lin and Jiung-Long Huang</i>	

Ubiquitous Multimedia Services in Home-Based Context-Aware Environments	77
<i>Chih-Lin Hu, Cheng-Lun Lin, Hung-Tsung Huang, Yi-Yu Su, and Pin-Chuan Liu</i>	
14-ms-Group-Delay and Low-Complexity Algorithm Design of 18-Band Quasi-ANSI S1.11 1/3 Octave Filter Bank for Digital Hearing Aids	81
<i>Shin-Chi Lai, Chih-Hao Liu, Ling-Yi Wang, and Sheau-Fang Lei</i>	
Low-Complexity Algorithm of Recursive Analysis and Synthesis Quadrature Mirror Filterbanks for Digital Radio Mondiale	85
<i>An-Kai Li, Shin-Chi Lai, Wen-Kai Tsai, and Sheau-Fang Lei</i>	
A Novel Turtle Shell Based Scheme for Data Hiding	89
<i>Ching-Chun Chang, Yanjun Liu, and Thai-Son Nguyen</i>	

Session 5: Intelligent and Multimedia Computing for Real-Life Applications

Comments on Chaotic Maps-Based Password-Authenticated Key Agreement Using Smart Cards	94
<i>Ya-Fen Chang, Wei-Liang Tai, Wei-Na Wu, Wei-Han Li, and Yung-Chi Chen</i>	
An ID-Based User Authentication Scheme for Cloud Computing	98
<i>Jen-Ho Yang and Pei-Yu Lin</i>	
Analysis of Passenger Flow in Airport Terminal	102
<i>Ping-Nan Chiang and Kevin Taaffe</i>	
A QR Code-Based on-Street Parking Fee Payment Mechanism	106
<i>Wen-Chuan Wu</i>	
An Image Hiding Method by Applying Tree Structure on Linking Pixels	110
<i>Chi-Shiang Chan, Yi-Hui Chen, and Pei-Yu Lin</i>	
An Optimal Modification BTC Scheme Based on Binary Search Tree	114
<i>Chia-Chen Lin, Xiao-Long Liu, Jian-Jie Zhou, and Shyan-Ming Yuan</i>	
An Instantiation of the Multiple-Transfer Framework to Reduce Efforts in Context Model Learning for New Users in Smart Homes	118
<i>Ching-Hu Lu and Yi-Ting Chiang</i>	

Session 6: Security and Privacy in Computer Forensics Applications

A Webpage Data Hiding Method by Using Tag and CSS Attribute Setting	122
<i>Yung-Chen Chou and Hsin-Chi Liao</i>	
An Efficient and Simplified Data Hiding Technique Based on 2's Complement	126
<i>Tzu-Chuen Lu, Chun-Ya Tseng, Chang-Mu Chen, Hui-Shih Leng, and Ying-Hsuan Huang</i>	

Tampering Detection and Content Recovery for Digital Images Using Halftone Mechanism	130
<i>Shanshan Yang, Chuan Qin, Zhenxing Qian, and Boqing Xu</i>	
Novel Image Authentication Scheme for AMBTC-Compressed Images	134
<i>Chia-Chen Lin, Yuehong Huang, and Wei-Liang Tai</i>	
A Novel Reversible Data Hiding Scheme Using Ripple Strategy and Histogram Shifting	138
<i>Yung-Chen Chou, Huang-Ching Lee, and Yong-Jin Yu</i>	
Data Hiding Scheme Based on Edge Detection and Triangular Mirroring	142
<i>Tzu-Chuen Lu, Chun-Ya Tseng, Hui-Shih Leng, and Chun-Chih Huang</i>	
Transmissions for Delay-Guaranteed Information Using Smart Antenna Systems	146
<i>Li-Ling Hung, Yu-Wei Huang, and Sheng-Han Wu</i>	

Session 7: Information Applications

An Automatic Chinese Font Library Generation Method by Modifying Vector Contour Curves	150
<i>Wenfa Qi, Yuxin Liu, and Wei Guo</i>	
The Adaptive Recommendation Segment Mechanism to Reduce Traffic Congestion in Smart City	155
<i>Gwo-Jiun Horng</i>	
Elimination of Matching Digital Images to Identify Objective Measures of Quality	159
<i>Jakub Peksinski, Grzegorz Mikolajczak, and Janusz Pawel Kowalski</i>	
On Extreme Learning Machine for Watermarking of an Images in Discrete Wavelet Transform Domain	163
<i>Ram Pal Singh, Neelam Dabas, Anurag Mishra, and Vikash Cahudhary</i>	
Analyzing Item Features for Cold-Start Problems in Recommendation Systems	167
<i>Soryoung Kim, Sang-Min Choi, Yo-Sub Han, Ka Lok Man, and Kaiyu Wan</i>	
A Hybrid Multi-functions Digital Public Address System with Earthquake Early Warning	171
<i>Chung-Heng Chuang, Tsung-Hsing Lin, Liang-Bi Chen, Tung-Lin Lee, Chaio-Hsuan Chuang, Katherine Shi-Min Li, Chih-Lin Hung, and Chao-Wen Wu</i>	
A Known-Key Scenario for Steganalysis and a Highly Accurate Detector within It	175
<i>Viktor Monarev and Andrey Pestunov</i>	

The K-Means Clustering Methods Applied in the Message Scheduling Methods of Flexray Communication Network Based on the Embedded Flexray Node	179
<i>Yung-Hoh Sheu, Zuo-Wen Wang, and Yao-Jhong Liou</i>	

Session 8: Multimedia Signal Processing and Network Technology I

Semantic Vocabulary Cognition Model for the Improvement of Automatic Image Annotation	183
<i>Zhonghua Sun and Kebin Jia</i>	
Optimization for I-Frame Based on Residual Image	187
<i>Yuan Gao, Pengyu Liu, and Kebin Jia</i>	
A Water Environment Security Monitoring Algorithm Based on Intelligent Video Surveillance	191
<i>Zihan Pang, Kebin Jia, and Jinchao Feng</i>	
Research Progress of Obstacle Detection Based on Monocular Vision	195
<i>Qiang Wu, Jie Wei, and Xuwen Li</i>	
Stereo Matching Algorithm of Color Image Based on Weber's Law and Census	199
<i>Qiang Wu, Xiangnan Zhao, and Xuwen Li</i>	
Modification of Disparity Vector Derivation from Neighbouring Blocks in 3D-HEVC	203
<i>Yuxin Song and Kebin Jia</i>	
The PCA-Demons Algorithm for Medical Image Registration	207
<i>Liya Zhao and Kebin Jia</i>	
A Deep Structure for Facial Expression Recognition under Partial Occlusion	211
<i>Yue Cheng, Bin Jiang, and Kebin Jia</i>	

Session 9: Multimedia Signal Processing and Network Technology II

Flexible Quantum Image Secret Sharing Based on Measurement and Strip	215
<i>Xianhua Song, Shen Wang, Jianzhi Sang, Xuehu Yan, and Xiamu Niu</i>	
An FPGA-Based Design of Efficient QKD Sifting Module	219
<i>Qiong Li, Zhibin Lin, Dan Le, and Hucheng Liu</i>	
Equivalence Proof of Two (2, n) Progressive Visual Secret Sharing	223
<i>Xuehu Yan, Shen Wang, and Xiamu Niu</i>	
An FPGA-Based Communication Scheme of Classical Channel in High-Speed QKD System	227
<i>Qiong Li, Siyou Ma, Haokun Mao, and Lin Meng</i>	

Spam Detection Approach Based on C-Support Vector Machine and Kernel Principal-Component Analysis	231
<i>Shu Geng, Liu Lv, and Rongjun Liu</i>	
A Method to Generate Random Number for Cryptographic Application	235
<i>Xiamu Niu, Yongting Wang, and Di Wu</i>	
A Novel Finger Vein Image Quality Evaluation Method Based on Triangular Norm	239
<i>Jialiang Peng, Qiong Li, and Xiamu Niu</i>	
A Novel Real-Time Aeromagnetic Compensation Method Based on RLSQ	243
<i>Zhenjia Dou, Kexin Ren, Qi Han, and Xiamu Niu</i>	
Perceptual Image Hashing for DIBR 3D Images Based on Ring Partition and SIFT Feature Points	247
<i>Chen Cui, Shen Wang, and Xiamu Niu</i>	

Session 10: Recent Advances in Information Hiding and Enrichment Technologies for Audio and Speech Signals

Gender-Dependent Babble Maskers Created from Multi-speaker Speech for Speech Privacy Protection	251
<i>Kazuhiro Kondo and Hiroki Sakurai</i>	
Encoding Data by Frequency Modulation of a High-Low Siren Emitted by an Emergency Vehicle	255
<i>Akira Nishimura</i>	
Robust Audio Information Hiding Based on Stereo Phase Difference in Time-Frequency Domain	260
<i>Nobutaka Ono</i>	
Secure Speech Encryption System Using Segments for Speech Synthesis	264
<i>Minoru Kohata</i>	
An Audio Watermarking Method Using Pitch-Transformed Sound of Original Music	268
<i>Harumi Murata and Akio Ogihara</i>	
Hybrid Speech Watermarking Based on Formant Enhancement and Cochlear Delay	272
<i>Shengbei Wang and Masashi Unoki</i>	
A Novel Reversible Data Hiding Scheme Based on Reference Pixels and Adaptive Block Selection	276
<i>Xinlu Gui, Siren Cai, Xiaolong Li, and Bin Yang</i>	

Session 11: Intelligent Video Processing

Moving-Object Intrusion Detection Based on Retinex-Enhanced Method	281
<i>Chao-Ho Chen, Tsong-Yi Chen, Yu-Chun Lin, and Wu-Chih Hu</i>	
HDR Enhancement Based on Bi-curve Mapping for Image Sequences	285
<i>Tsong-Yi Chen, Chao-Ho Chen, Tzu-Feng Tseng, Guan-Ming Luo, and Wu-Chih Hu</i>	
An Efficient Method for Sweep Coverage with Minimum Mobile Sensor	289
<i>Bing-Hong Liu, Ngoc-Tu Nguyen, and Van-Trung Pham</i>	
A Fast Method for Decoding Reed-Solomon Codes on Processors	293
<i>Yan-Haw Chen, Ching-Fu Huang, and Shao-I Chu</i>	
An Energy Minimization Approach for Automatic Video Shot and Scene Boundary Detection	297
<i>Sinnu Susan Thomas, Sumana Gupta, and K.S. Venkatesh</i>	
A Dynamic Street View System Using Video Event Data Recorder	301
<i>Ching-Hao Lai, Jun-Dong Chang, Ji-Wei Lu, and Fay Huang</i>	

Session 12: System-on-Chip for Signal Processing

Hardware and Software Co-design of the Moving Object Tracking System	305
<i>Yeu-Hong Shiau, Cheng-Han Li, Zhi-hao Wang, and Yi-Tai Guo</i>	
Low-Cost and Low-Complexity Electrocardiogram Signal Recorder Design Based on Arduino Platform	309
<i>Shin-Chi Lai, Wen-Chih Li, Sin-He You, Da-Wei Jhuang, and Shih-Ting Gao</i>	
A Novel Coherence-Function-Based Noise Suppression Algorithm by Applying Sound-Source Localization and Awareness-Computation Strategy for Dual Microphones	313
<i>Shin-Chi Lai, Hsu-Cheng Lai, Feng-Chung Hong, Huan-Ru Lin, and Sheau-Fang Lei</i>	
Ultra Low Power Circuit Design Based on Adiabatic Logic	317
<i>Chi-Chia Sun, Cheng-Chih Wang, and Ming-Hwa Sheu</i>	
Real-Time Text Detection Using PAC/DUE Embedded System	321
<i>Shih-Chang Hsia, Cheng-Nan Ho, and Chien-Hung Liu</i>	
Feature Points Based Video Object Tracking for Dynamic Scenes and Its FPGA System Prototyping	325
<i>Yin-Tsung Hwang, Bing-Cheng Tsai, Yu-Ting Pai, and Ming-Hwa Sheu</i>	
High Dynamic Range Image Based on Block-Based Edge Strength for Embedded System Design	329
<i>Wen-Kai Tsai, Chang-Jie Lai, Ming-Hwa Sheu, and Tsu-Hsiung Chen</i>	

Session 13: Video Information Processing and Pattern Recognition

Robust Object Tracking Using Adaptive Multi-Features Fusion Based on Local Kernel Learning	333
<i>Hainan Zhao and Xuan Wang</i>	
Dependency Parsing with Structure Knowledge	337
<i>Shixi Fan, Yongshuai Hou, and Lidan Chen</i>	
Semi-supervised Marginal Fisher Analysis	341
<i>Shu Wang</i>	
Extracting Learning Features of Knowledge Unit in Knowledge Map	345
<i>XiangJun Huang, QingHua Zheng, and Chao Zhang</i>	
Visualization for Non-linear Enhanced Volume Data	349
<i>Fei Yang, Weigang Lu, Lei Zhang, Kuanquan Wang, and Yemin Li</i>	
Night Video Surveillance Based on the Second-Order Statistics Features	353
<i>Cheng-Chang Lien, Wen-Kai Yu, Chang-Hsing Lee, and Chin-Chuan Han</i>	
Robust Handwriting Extraction and Lecture Video Summarization	357
<i>Fu-Hao Yeh, Greg C. Lee, Ying-Ju Chen, and Chien-Hsing Liao</i>	
Full-Frame Video Stabilization via SIFT Feature Matching	361
<i>Yu-Hsi Chen, Hsueh-Yi Sean Lin, and Chih-Wen Su</i>	

Session 14: Intelligent Multimedia Tools and Applications

Bezier Curve-Based Tour Generator for Navigation in Google Earth-Based Virtual Campus	365
<i>Jen-Perng Yu, Jyh-Jong Lin, Mei-Chen Chu, and Yuh-Hwa Pai</i>	
Eye Tracking for Analyzing Applied Effects on Instructional Graphics Directing Visual Attention	369
<i>Hui-Hui Chen, Hung-Sheng Lai, Bor-Jiunn Hwang, Chiao-Wen Kao, and Shih-Yu Huang</i>	
Applying Media Richness Theory to Essay Writing Instruction - A Case of an Elementary School	373
<i>Shyi-Huey Wu, Bor-Jiunn Hwang, Ya-Ping Fan, and Ching-Hui Chen</i>	
A Dead-Reckoning Positioning Scheme Using Inertial Sensing for Location Estimation	377
<i>Yih-Shyh Chiou, Fuan Tsai, and Sheng-Cheng Yeh</i>	
High-Payload Lossless Data Hiding Scheme with Block Statistics Characteristics	381
<i>Shang-Kuan Chen, Ran-Zan Wang, and Wen-Pinn Fang</i>	

Data Transmission System for Mobile Device by Audio Hiding Approach	385
<i>Wen-Pinn Fang, Ran-Zan Wang, Tzu-Hsuan Liao, Shang-Kuan Chen, and Yeuan-Kuen Lee</i>	
Video Resizing for Mobile Device	388
<i>Wen-Pinn Fang, Ming-Hao Liu, Yeuan-Kuen Lee, and Rei-Heng Cheng</i>	
Real-Time Broadcast System for Android System	392
<i>Wen-Pinn Fang, Chun Li, and Tsu-Hsun Fu</i>	
A Study on Captcha Recognition	395
<i>Chii-Jen Chen, You-Wei Wang, and Wen-Pinn Fang</i>	

Session 15: Advanced Multimedia Processing and Retrievals

An Image Inpainting Method for Stereoscopic Images Based on Filling Route	399
<i>Fang-Hsuan Cheng and Moo-Di Loo</i>	
Retinal Projection Display Using Diffractive Optical Element	403
<i>Yasuhiro Takatsuka, Hirofumi Yabu, Kayo Yoshimoto, and Hideya Takahashi</i>	
Three-Dimensional Light Field Display with Overlaid Projection	407
<i>Hodaka Yamada, Hirofumi Yabu, Kayo Yoshimoto, and Hideya Takahashi</i>	
Vision-Based Path Learning for Home Robots	411
<i>Atsushi Ueno, Natsuki Kajihara, Natsuko Fujii, and Tomohito Takubo</i>	
A Cluster Based Ranking Framework for Multi-typed Information Networks	415
<i>Pyke Tin, Takashi Toriu, Thi Thi Zin, and Hiromitsu Hama</i>	
A New Background Subtraction Method Using Bivariate Poisson Process	419
<i>Thi Thi Zin, Pyke Tin, Takashi Toriu, and Hiromitsu Hama</i>	
Integration of Multiple Shape Features for Human Detection in Videos	423
<i>Liang-Hua Chen, Pei-Chieh Lee, Li-Yun Wang, and Hong-Yuan Liao</i>	
Scientific Literature Retrieval Model Based on Weighted Term Frequency	427
<i>Xi-Quan Yang, Dian Yang, Ming Yuan, and Xing-Hua Lv</i>	

Session 16: Intelligent Image and Signal Processing

Based on the Texture Analysis to Inspect the Tread Worn Status on the Tire	431
<i>Shih-Yen Huang and You-Jyun Syu</i>	
Blurred Image Restoration Using Fast Blur-Kernel Estimation	435
<i>Hui-Yu Huang and Wei-Chang Tsai</i>	
The Cleaning Machine Path Design Using Image Recognition Techniques	439
<i>Wen-Yuan Chen, Shih-Sung Cheng, Ching-Te Wang, Chin-Fu Tsai, and Chiou-Kou Tung</i>	

Particle Swarm Optimization Enhancement by Applying Global Ratio Based Communication Topology	443
<i>Ruey-Maw Chen and Hua-Tsun Huang</i>	
A Modified K-Means Algorithm - Two-Layer K-Means Algorithm	447
<i>Chen-Chung Liu, Shao-Wei Chu, Yung-Kuan Chan, and Shyr-Shen Yu</i>	
License Plate Location System Using Smart-Phone with G-Sensor	451
<i>Chuin-Mu Wang, Jian-De Hong, Geng-Cheng Lin, Jing-Yuan Su, and Zhe-Fu Lin</i>	

Session 17: Multimedia Security and Privacy

A New Approach to Reversible Watermarking	455
<i>Toshiki Ito, Ryo Sugimura, Hyunho Kang, Keiichi Iwamura, Kitahiro Kaneda, and Isao Echizen</i>	
A Zero-Watermarking-Like Steganography and Potential Applications	459
<i>Hirokazu Ishizuka, Isao Echizen, Keiichi Iwamura, and Koichi Sakurai</i>	
Surveillance Camera System to Achieve Privacy Protection and Crime Prevention	463
<i>Kento Kobayashi, Keiichi Iwamura, Kitahiro Kaneda, and Isao Echizen</i>	
Image Protection System with Steganography and Authentication	467
<i>Hyunho Kang and Keiichi Iwamura</i>	
Analysis of Facebook Friends Using Disclosure Level	471
<i>Shimon Machida, Tomoko Kajiyama, Shimada Shigeru, and Isao Echizen</i>	
Steganalysis of LSB Matching Based on Local Binary Patterns	475
<i>Xinlu Gui, Xiaolong Li, and Bin Yang</i>	
Optimizing Pixel Predictors Based on Self-Similarities for Reversible Data Hiding	481
<i>Xiaocheng Hu, Weiming Zhang, and Nenghai Yu</i>	
Polynomial-Based Secret Sharing Scheme Based on the Absolute Moment Block Truncation Coding Technique	485
<i>Chin-Chen Chang and Chin-Yu Sun</i>	
Applying Histogram Modification to Embed Secret Message in AMBTC	489
<i>Chin-Chen Chang, Hsiao-Ling Wu, and Ting-Feng Chung</i>	

Session 18: Recent Advances in Robust Information Hiding against Print-Scan Process

Compatible 2D-Code Having Tamper Detection System with QR-Code	493
<i>Takayuki Ishihara and Michiharu Niimi</i>	
A Study of Equipment Dependence of a Single-Dot Pattern Method for an Information-Hiding by Applying an Error-Correcting Code	497
<i>Kitahiro Kaneda, Hiroyasu Kitazawa, Keiichi Iwamura, and Isao Echizen</i>	

Novel Proposal and Evaluation of Information Extraction Method from Artificial Fiber Pattern Using a Camera	502
<i>Kitahiro Kaneda, Tomoki Inui, Keiichi Iwamura, and Isao Echizen</i>	
Mathematical Simulation Model and Its Evaluation for Artificial Fiber Patterns	507
<i>Kitahiro Kaneda, Kenta Kawabata, Keiichi Iwamura, and Isao Echizen</i>	
A Large Payload Information Hiding Scheme Using Two-Level Exploiting Modification Direction	512
<i>Chin-Chen Chang and Hsiao-Ling Wu</i>	
Effects of Random Sign Encryption in JPEG 2000-Based Data Hiding	516
<i>Wannida Sae-Tang, Masaaki Fujiyoshi, and Hitoshi Kiya</i>	
Robust Message Hiding for QR Code	520
<i>Thach V. Bui, Nguyen K. Vu, Thong T.P. Nguyen, Isao Echizen, and Thuc D. Nguyen</i>	

Session 19: Network Testbed and Industrial Control System Security

Cyber Security Risk Assessment of Communication Network of Substation Based on Improved Grey Clustering	524
<i>Haihui Gao, Zhonghua Dai, Yong Peng, and Huikang Lu</i>	
Multi-agent Intrusion Detection System Using Feature Selection Approach	528
<i>Yi Gong, Yong Fang, Liang Liu, and Juan Li</i>	
A New Information Security Risk Assessment Method in Power Production System Based on Rough Sets and Bayesian Network	532
<i>Zhonghua Dai, Haihui Gao, Yong Peng, and Lu Huikang</i>	
Techniques and Research Trends of Network Testbed	537
<i>Haihui Gao, Yong Peng, Zhonghua Dai, and Hanjing Li</i>	
Formalization and Systematization of Differential Cryptanalysis Notions	542
<i>Andrey Pestunov</i>	
An AODV-Based Backup Routing Mechanism for Time-Critical in Wireless Mesh Networks	546
<i>Ming-Hwa Cheng, Rui-Juan Deng, Wen-Shyang Hwang, and Yan-Jing Wu</i>	

Session 20: Signal Processing Methods for Music Information Retrieval in the Future Internet

A Singing Voice Synthesizer Controlled by Arm Motions Using Compressed Phoneme Determination Algorithm	550
<i>Masashi Ito, Tomohiro Ashina, and Yujiro Saegusa</i>	
Analysis of English Pronunciation of Singing Voices Sung by Japanese Speakers	554
<i>Kazumichi Yoshida, Takashi Nose, and Akinori Ito</i>	
Assessing the Intended Enthusiasm of Singing Voice Using Energy Variance	558
<i>Akinori Ito</i>	
Transcribing Frequency Modulated Musical Expressions from Polyphonic Music Using HMM Constrained Shift Invariant PLCA	562
<i>Dooyong Sung and Kyogu Lee</i>	
On-Line Nonnegative Matrix Factorization for Music Signal Separation	566
<i>Seokjin Lee</i>	
Melody Extraction for Vocal Polyphonic Music Based on Bayesian Framework	570
<i>Liming Song, Ming Li, and Yonghong Yan</i>	

Session 21: Technologies for Speech Communication in the Future Internet

Emotional Speech Recognition and Synthesis in Multiple Languages toward Affective Speech-to-Speech Translation System	574
<i>Masato Akagi, Xiao Han, Reda Elbarougy, Yasuhiro Hamada, and Junfeng Li</i>	
Quantized F0 Context and Its Applications to Speech Synthesis, Speech Coding, and Voice Conversion	578
<i>Takashi Nose and Takao Kobayashi</i>	
Voice Activity Detection Based on Statistical Model Employing Deep Neural Network	582
<i>Inyoung Hwang and Joon-Hyuk Chang</i>	
Speaker Adaptation Using Nonlinear Regression Techniques for HMM-Based Speech Synthesis	586
<i>Doo Hwa Hong, Shin Jae Kang, Joun Yeop Lee, and Nam Soo Kim</i>	
Boosted Hybrid DNN/HMM System Based on Correlation-Generated Targets	590
<i>Mengzhe Chen, Qingqing Zhang, Jielin Pan, and Yonghong Yan</i>	
Enhanced Out of Vocabulary Word Detection Using Local Acoustic Information	594
<i>Xuyang Wang, Ta Li, Pengyuan Zhang, Jielin Pan, and Yonghong Yan</i>	

Session 22: 3D Spatial Audio Technologies in the Future Internet

Virtual Auditory Display by Remote Rendering via Computer Network	598
<i>Yukio Iwaya, Makoto Otani, Takao Tsuchiya, and Junfeng Li</i>	
Effect of Interaural Difference for Localization of Spatially Segregated Sound	602
<i>Daisuke Morikawa</i>	
Representation of Individual HRTFs Using Weighting Coefficients of SENZI	606
<i>Shuichi Sakamoto, Yoshiki Satou, Jorge Trevino, and Yo-iti Suzuki</i>	
Feasibility Study for Objective Measurement on Sound Localization Using Auditory Evoked Potential	610
<i>Chan Jun Chun, Seok Hee Jeong, Jong Won Shin, Hong Kook Kim, and Jin Ah Kang</i>	
Auralization of Musical Instruments in Virtual Halls Considering Source Directivity	614
<i>Park Kyoungsoo, Jeong-Hun Seo, Kim JeungHun, and Cheon Sung Jun</i>	
On the Performance and Robustness of Crosstalk Cancelation with Multiple Loudspeakers	618
<i>Xing Yang, Risheng Xia, Zhonghua Fu, Junfeng Li, Yonghong Yan, Shuichi Sakamoto, and Yoiti Suzuki</i>	
Recognizing Actions with Multi-view 2D Observations Recovered from Depth Maps	622
<i>Guoliang Lu, Yiqi Zhou, and Xueyong Li</i>	

Session 23: New Advances on Multimedia Security and Forensics

Improved SIFT-Based Copy-Move Detection Using BFSN Clustering and CFA Features	626
<i>Lu Liu, Rongrong Ni, Yao Zhao, and Siran Li</i>	
Security Monitoring by Watermarking and Hashing for Multimedia Service on Internet Platform	630
<i>Zi Wang, Ju Liu, Wenbo Wan, Jiande Sun, Jun Bo, and Yongkang Liu</i>	
Pitfalls in an Ultra-Lightweight Authentication Protocol for Low-Cost RFID	634
<i>Chien-Ming Chen, Jeng-Shyang Pan, Raylin Tso, Szu-Wei Huang, and Mu-En Wu</i>	
Regular Clipping Detection of Image Based on SIFT	638
<i>Huang Yan-Li, Cui Hao-Liang, and Niu Shao-Zhang</i>	
A Secure RFID Mutual Authentication Protocol Conforming to EPC Class 1 Generation 2 Standard	642
<i>Chin-Chen Chang, Wei-Yi Chen, and Ting-Fang Cheng</i>	

Session 24: Wireless Network

The Research and Analysis for Rear View Transmission Based on IEEE 802.11 Wireless Network	646
<i>Tsung-Yuan Wu and Wei-Tsong Lee</i>	
Reducing the Power Consumption of Servers with Bandwidth Consideration	650
<i>Yu-Chang Lin, Wei-Tsong Lee, and Jing Yue Qiu</i>	
FHR-SCTP: The Research of a Quality Aware SCTP Congestion Control Mechanism to Improve Handover Efficiency	654
<i>Chen-Wei Chang, Wei-Tsong Lee, and Hsin-Wen Wei</i>	
Dynamically Adjust Packet Size and Block Size to Achieve Maximum Effectiveness of Forward Error Correction	658
<i>Kai-Po Chuang, Wei-Tsong Lee, and Hsin-Wen Wei</i>	
The Study of Mobile E-Portfolio Architecture	662
<i>Yu-Jen Pan</i>	
A Location-Aware Home Appliance Control System	666
<i>Rung-Shiang Cheng, Chia-Peng Lin, and Jiun-Yu Jhou</i>	

Session 25: Wireless Network Algorithm and Theory I

A Density-Aware Location-Aided Routing Protocol for Wireless Ad-Hoc Networks	670
<i>Shih-Chang Huang and Hong-Yi Chang</i>	
A Novel Recommendation Scheme for Increasing Connectivity in ZigBee Wireless Sensor Networks	674
<i>Hong-Yi Chang, Shih-Chang Huang, Chih-Chun Lai, and Zih-Huan Hong</i>	
Computing the Probability of Specific Random Sector Graphs with Applications in Wireless Networks with Directional Antennas	678
<i>Chun-Yi Wu and Chang Wu Yu</i>	
A Novel Relay Placement Algorithm Based on Puzzle Games for Indoor Wireless Sensor Networks	682
<i>Hong-Yi Chang, Yu-Huei Huang, and Tu-Liang Lin</i>	
A Novel Algorithm for Searching Parking Space in Vehicle Ad Hoc Networks	686
<i>Hong-Yi Chang, Hao-Wen Lin, Zih-Huan Hong, and Tu-Liang Lin</i>	
Performance Evaluations of an Ant Colony Optimization Routing Algorithm for Wireless Sensor Networks	690
<i>Tu-Liang Lin, Yu-Sheng Chen, and Hong-Yi Chang</i>	

Session 26: Cloud Computing

Adaptive Job Assign Algorithm Based on Hierarchical Server Cloud Computing	694
<i>Jing-Yue Qiu, Hsin-Wen Wei, Wei-Tsong Lee, and Yu-Chang Lin</i>	
A Novel Protocol UDCP for Improving Fairness and Maintaining the High-Speed Rate of UDP	698
<i>Heng-Yao Chang, Wei-Tsong Lee, and Hsin-Wen Wei</i>	
Base on Game Theory Model to Improve Trust Access Control in Cloud File-Sharing System	702
<i>Wei-Jyun Wong, Wei-Tsong Lee, and Hsin-Wen Wei</i>	
Leakage Resilient Provable Data Possession in Public Cloud Storage	706
<i>Yongjun Ren, Yaping Chen, Jin Wang, and Liming Fang</i>	
Attributed Based Provable Data Possession in Public Cloud Storage	710
<i>Yongjun Ren, Zhenqi Yang, Jin Wang, and Liming Fang</i>	
Data Access Control for Multi-authority Cloud Storage Systems	714
<i>Zhangjie Fu, Lin Xin, Jin Wang, and Xingming Sun</i>	

Session 27: Wireless Network Algorithm and Theory II

A Virtual Force Based Movement Scheme for Area Coverage in Directional Sensor Networks	718
<i>Chiu-Kuo Liang, Cheng-Yen Chung, and Chuan-Feng Li</i>	
Self-Stabilizing Distributed Formation of Minimal k-Dominating Sets in Mobile Ad Hoc Networks	723
<i>Li-Hsing Yen and Zong-Long Chen</i>	
Analysis of Handover Decision with Adaptive Offset in Next-Generation Hybrid Macro/Femto-cell Networks	729
<i>Min-Shu Hung, Jen-Yi Pan, and Zheng-En Huang</i>	
Energy Consumption Analysis for Sensors in Multi-sink Wireless Sensor Networks	735
<i>Rei-Heng Cheng, Chiming Huang, Wen-Pinn Fang, Shang-Kuan Chen, and Ran-Zan Wang</i>	
End-to-End Delay Performance Analysis of Anypath Routing over Wireless Mesh Networks	739
<i>Ming-Che Chen and Hui-Tang Lin</i>	

Session 28: Internet I

A Reducing Broadcast Message Method in Vehicular Networks	744
<i>Ming-Fong Tsai and Chih-Han Chang</i>	
Incorporation of Perceptually Energy-Compensated QIM into DWT-DCT Based Blind Audio Watermarking	748
<i>Hwai-Tsu Hu, Szu-Hong Chen, and Ling-Yuan Hsu</i>	
Service Conflict Detection and Avoidance Based on Scene with Urgency Degree	753
<i>Xukai Wang, Yan Sun, and Hong Luo</i>	
A Dimension Model for Conflict-Free Service Management in Smart Environment Control System	757
<i>Yanchen Ren, Hong Luo, and Liang Liu</i>	
A Novel Automatic Ontology Construction Method Based on Web Data	762
<i>Qiuxia Song, Jin Liu, Xiaofeng Wang, and Jin Wang</i>	
A New Genetic Algorithm for Overlapping Community Detection	766
<i>Bo Shen, Ningwei Wang, and Huihuai Qiu</i>	

Session 29: Security

Security Analysis for UHF RFID Tags	770
<i>Xinwei Liu, Yan Sun, and Jie Liu</i>	
Oriented Group Provable Data Possession in Public Cloud	775
<i>Yongjun Ren, Jiang Xu, Jin Wang, and Liming Fang</i>	
Analysis of Delegable and Proxy Provable Data Possession for Cloud Storage	779
<i>Yongjun Ren, Jian Shen, Jin Wang, and Liming Fang</i>	
Secure Storage of Data in Cloud Computing	783
<i>Zhangjie Fu, Xinyue Cao, Jin Wang, and Xingming Sun</i>	
Document Attribute-Based Keyword Search over Encrypted Data	787
<i>Zhangjie Fu, Jie Xi, Jin Wang, and Xingming Sun</i>	
A Similarity Search Method for Encrypted Cloud Document	791
<i>Zhangjie Fu, Jiangang Shu, Jin Wang, and Xingming Sun</i>	
Security Analysis of Delegable and Proxy Provable Data Possession in Public Cloud Storage	795
<i>Yongjun Ren, Jian Shen, Jin Wang, and Liming Fang</i>	

Session 30: Control I

Intelligent Level Crossing Safety Control System	799
<i>Chih-Wen Li, Chia-Cheng Chu, Wei-Lun Fong, and Hwang-Cheng Wang</i>	
A Metaheuristic Artificial Immune System Algorithm for Mobile Robot Navigation	803
<i>Hsu-Chih Huang, Ter-Feng Wu, and Chun-Yu Huang</i>	
Adaptive Hierarchical Emotion Recognition from Speech Signal for Human-Robot Communication	807
<i>Ba-Vui Le and Sungyoung Lee</i>	
Impact of Jamming Attack on Galileo Receivers	811
<i>Ying-Ren Chien and Po-Yu Chen</i>	
Study of Stability Indices for Special Protection System in Taiwan	815
<i>Yi-Ting Chou, Yi-Jen Wang, Chung Han Hsieh, Ruei-Yu Wang, and Syed Khawar Shah</i>	

Session 31: Wireless Sensor Network

Data Acquisition and Transmission Reliability for Wireless Image Sensor Networks	819
<i>Dan Tao, Guangwei Yang, Yan Sun, Haiyang Zhang, and Xiaoyu Feng</i>	
K-Extended Constrain Independent Relay Node Placement with Base Stations in Two-Tiered Wireless Sensor Network	823
<i>Zhipeng Gao, Kan Chen, Weijing Cheng, Yuwen Hao, and Xiaoxue Li</i>	
An Energy Efficient Data Transmission Mechanism for Middleware of Wireless Sensor Network	827
<i>Zhiqiang Shi, Jin Liu, Qiuxia Song, and Jin Wang</i>	
A Fuzzy Control Theory and Neural Network Based Sensor Network Control System	831
<i>Anqi Wang, Jin Liu, Xiaofeng Wang, and Jin Wang</i>	
A Sensor Information Gateway Based on Thing Interaction in IoT-IMS Communication Platform	835
<i>Jenq-Muh Hsu and Chin-Yo Chen</i>	

Session 32: Control II

Adaptive Fuzzy CMAC Design for an Omni-directional Mobile Robot	839
<i>Ter-Feng Wu, Hsu-Chih Huang, Pu-Sheng Tsai, Nien-Tsu Hu, and Zhi-Qiang Yang</i>	
A Single-Stage Power Converter for DC UPS Applications	844
<i>Maoh-Chin Jiang, Bing-Jyun Shih, Shyh-Shing Perng, and Tai-Chun Liu</i>	

A High Performance Three-Phase Active Power Filter	848
<i>Maoh-Chin Jiang, Shyh-Shing Perng, Bing-Jyun Shih, Tai-Chun Liu, and Wei-Cheng Ke</i>	
Design and Implementation of a FPGA-Based Induction Motors Drive System	852
<i>Shyh-Shing Perng, Chih-Wen Li, Maoh-Chin Jiang, Ter-Feng Wu, and Rui-Ting Ma</i>	
Design of a Kinect Sensor Based Posture Recognition System	856
<i>Chia-Wen Chang, Min-Da Nian, Yi-Fang Chen, Ching-Ho Chi, and Chin-Wang Tao</i>	

Session 33: Network Service

An Algorithm to Detect the Crack in the Tunnel Based on the Image Processing	860
<i>Dapeng Qi, Yun Liu, Xiaoyang Wu, and Zhenjiang Zhang</i>	
A Concept Maps Oriented E-Book Content Design System for Evaluating Learning Performance	864
<i>De-Wei Chang, Chin-Feng Lai, Shih-Yeh Chen, Yueh-Min Huang, and Yu-Lin Jeng</i>	
A Forecasting System of Micro-blog Public Opinion Based on Artificial Neural Network	868
<i>Nai-Yue Chen, Yun Liu, and Zhen-Jiang Zhang</i>	
Research on Analysis Method of Network User Preference	872
<i>Shen Bo, Zhang Huan, and Hu Baowen</i>	
An Improved Collaborative Filtering Recommendation Algorithm for Microblog Based on Community Detection	876
<i>Hui-Huai Qiu, Yun Liu, Zhen-Jiang Zhang, and Gui-Xun Luo</i>	
Sorting Topic Specific Web Pages Based on Ontology Knowledge	880
<i>Qiuxia Song, Jin Liu, Ming Ni, Liang Chen, and Jialiang Shen</i>	

Session 34: Communication

A Heuristic Design of Uplink Scheduler in LTE-A Networks	884
<i>Yen-Wen Chen, Pei-Ying Hsu, Jung-Heng Tsai, Po-Yin Liao, and Meng-Hsien Lin</i>	
An Effective NAT Traversal Mechanism for IMS Applications in 3GPP Networks	889
<i>Whai-En Chen and Bo-En Chen</i>	
Facilitating Initial Cell Selection in Dense Heterogeneous Network Using Mobile Speed Classification	893
<i>Chun-Yen Hsu, Chia-Hung Wei, Feng-Ming Yang, and Whai-En Chen</i>	
Downlink Co-tier Interference Mitigation for Femtocell Networks	898
<i>Kuo-Chang Ting, Hwang-Cheng Wang, Chih-Cheng Tseng, Fang-Chang Kuo, and Hung-Te Huang</i>	

A Study on Effects of Different Access Modes on Database Performance for SIP Server	902
<i>Whai-En Chen, Shih-Yuan Cheng, and Yi-Lun Ciou</i>	
A Routing Framework in Software Defined Network Environment	907
<i>Zhaowen Lin, Can Zhang, Yan Ma, and Jian Li</i>	

Session 35: Internet II

Cloud Terminal Access and QoS Enhancement by Content Store and Service Load Classification in Named Data Network	912
<i>Tin-yu Wu and Chun-yu Hsieh</i>	
User Posting Behavior Analysis and Modeling in Microblog	916
<i>Yun Liu and Weiguo Yuan</i>	
Research on Topic Detection Strategy Based on Extension of Comments and HowNet Lexeme	920
<i>Yun Liu, Xiaoxian Li, and Bing Zhao</i>	
Mobile Payment Anomaly Detection Mechanism Based on Information Entropy	924
<i>Zhenjiang Zhang, Xiaoni Wang, and Lin Sun</i>	
A New Method of Subway Tunnel Crack Image Compression Based on ROI and Motion Estimation	928
<i>Xiaoyang Wu, Yun Liu, Dapeng Qi, and Zhenjiang Zhang</i>	
Analysis of Coexistence between the DTMB System and TD-LTE System	932
<i>Lianfen Huang, Xuelian Yang, Zhiyuan Shi, Tang Yuliang, Xin Su, and Jie Zeng</i>	
PBMA: A Proxy Based Mobility Support Approach in Named Data Networking	938
<i>Ying Rao, Deyun Gao, Hongbin Luo, Hongke Zhang, and Shuai Gao</i>	

Session 36: Internet III

A Star Search Algorithm for Civil UAV Path Planning with 3G Communication	942
<i>Fan-Hsun Tseng, Tsung-Ta Liang, Cho-Hsuan Lee, Li-Der Chou, and Han-Chieh Chao</i>	
A Dynamic Video Streaming Quality Adaption Method for IP Multimedia Subsystem	946
<i>Shih-Wen Hsu, Song-Chun Lin, Yong-Ming Jheng, Wei-Kuan Shih, and Han-Chieh Chao</i>	
A Power Saving Scheme taking into Account Coverage and Connection Problem in WSNs	950
<i>Shu-Wei Pai, Hsin-Hung Cho, Han-Chieh Chao, and Timothy K. Shih</i>	
The Potential Cloud Application Model for Internet of Things - Case Study of Shopping Malls	954
<i>Kai-Di Chang, Jiann-Liang Chen, Han-Chieh Chao, and Ching-Wei Liu</i>	

Session 37: Robotics

Use of Ultrasonic Sensors to Enable Wheeled Mobile Robots to Avoid Obstacles	958
<i>Ter-Feng Wu, Pu-Sheng Tsai, Nien-Tsu Hu, and Jen-Yang Chen</i>	
Digital Tracker for a Class of Continuous Time-Delay Singular Systems	962
<i>Nien-Tsu Hu, Ter-Feng Wu, Pu-Sheng Tsai, and Jen-Yang Chen</i>	
Adaptive Control Using the Fuzzy Basis Function with Robust Design	966
<i>Nien-Tsu Hu, Ter-Feng Wu, Pu-Sheng Tsai, and Jen-Yang Chen</i>	
Modeling of Fuzzy Control Design for Nonlinear Systems Based on Takagi-Sugeno Method	970
<i>Pu-Sheng Tsai, Ter-Feng Wu, Nien-Tsu Hu, and Jen-Yang Chen</i>	
Adaptive TSK Fuzzy Control Design Using Scaling Gain Adaptation for Nonlinear Systems	974
<i>Nien-Tsu Hu, Ter-Feng Wu, Pu-Sheng Tsai, and Jen-Yang Chen</i>	
Obstacle Avoidance System for Wheeled Mobile Robots by CMOS Image Sensors	978
<i>Pu-Sheng Tsai, Ter-Feng Wu, Nien-Tsu Hu, and Jen-Yang Chen</i>	
Author Index	982