Proceedings

The 2007 International Conference on Intelligent Pervasive Computing

IPC 2007

October 11th – 13th, 2007 Jeju Island, Korea



Los Alamitos, California
Washington • Tokyo



Table of Contents

The 2007 International Conference on Intelligent Pervasive Computing

IPC-07

Welcome Message from the IPC 2007 General Chairs	X
Welcome Message from the IPC 2007 Program Chairs	Xi
Welcome Message from the IPC 2007 Workshop Co-Chairs	xii
Welcome Message from the IUCE 2007 Workshop Co-Chairs	
Welcome Message from the IHS 2007 Workshop Co-Chairs	
Welcome Message from the IPM/ESA/RFID 2007 Workshop Co-Chairs	
Conference Organization	
Program Committee	x›
Main Conference Papers	
An Improvement on Authenticated Key Agreement Scheme	3
A Reliable and Configurable E-commerce Mechanism Based on Mobile Agents in Mobile Wireless Environments Hu Haiyang and Hu Hua	7
A Personalized Semantic Search Method for Intelligent e-Learning Jianguo Pan, Bofeng Zhang, Shufeng Wang, and Gengfeng Wu	11
Cognitive Computing in Analysis of 2D/3D Medical Images	15
A Fast Intra MB Mode Decision Method for the MPEG-2 to H.264	19
Adaptive Intrusion Detection in Wireless Sensor Networks Piya Techateerawat and Andrew Jennings	23
Increasing Polynomial Regression Complexity for Data Anonymization Jordi Nin, Jordi Pont-Tuset, Pau Medrano-Gracia, Josep L. Larriba-Pey, and Victor Muntés-Mulero	29
Target Coverage with QoS Requirements in Wireless Sensor Networks Yu Gu, Hengchang Liu, and Baohua Zhao Uzair Ahmad, Andrey Gavrilov, Sungyoung Lee, and Young-Koo Lee	35
Leakage Current Reduction in Data Caches on Embedded Systems Rafael Ubal, Julio Sahuquillo, Salvador Petit, Houcine Hassan, and Pedro López	45
A Context-Aware Access Control Model for Pervasive Computing Environments Sareh Sadat Emami, Morteza Amini, and Saadan Zokaei	51

Ventricular Arrhythmia Nonlinear Analysis	57
Zhang Daoming, Tan Guojun, Hao Jifei, and Han Yaofei	
Semantic Tolerance Relation-Based Image Representation and Classification Ying Dai	62
Detection of Leukocytes from In vivo Videos Chengcui Zhang, Wei-Bang Chen, Lin Yang, and Xin Chen	68
A Production Technique for a Q-table with an Influence Map for Speeding up Q-learning	72
A Comparative Performance Analysis of CBD Application Framework with JBean Application Framework for Improved Distributed Application Development Yonghwan Lee, Junaid Ahsenali Chaudhry, Dugki Min, Seungkyu Park, and Duckwon Chung	76
Implementation of Combinational and Sequential Functions in Embedded Firmware	80
Ontology Partition Method for Semantic Query Routing	86
Study on Location-Dependent Queries in Broadcasting Environment	90
A Novel Hybrid Particle Swarm Optimization Algorithm Combined with Harmony Search for High Dimensional Optimization Problems Hong-qi Li and Li Li	94
A Convolution Coding Scheme for PAR Reduction in WLAN-OFDM System Jae-Kwon Lee, Jeong-Sang Park, and Jin-Up Kim	98
A New Spectral Correlation Approach to Spectrum Sensing for 802.22 WRAN System	101
Heuristic Rules for Improving the Quality of Simulation Based on the Sequential Non-overlapping Batch Mean Jong-Suk R. Lee, and Hae-Duck J. Jeong Yaokai Feng, Akifumi Makinouchi, and Kunihiko Kaneko	105
Proactive (k, n) Threshold Secret Sharing Scheme with Variant k and n Shiuh-Jeng Wang, Yuh-Ren Tsai, and Pin-You Chen	117
Extended Welch Inner Product Thereom for Systematic Binary Block Codes Jia Hou, and Moon Ho Lee	121
A Complementary Quadriphase Jacket Sequence Design for DS-CDMA System	124
UWB MIMO System with Cooperative Multi-path Diversity Jia Hou and Moon Ho Lee	128
Gaussian Distribution for NPC Character in Real-Life Simulation	132
SMARbot: A Miniature Mobile Robot Paradigm for Ubiquitous Computing Yan Meng, Kerry Johnson, Brian Simms, Matthew Conforth, Charles Creamer, and Christopher Hawley	136
Application of Micro-Genetic Algorithm for Task Based Computing	140
DV-Based Extensible Video Transport Terminal for Standard-Definition Video Conference Dongtao Liu, Congxiao Bao, Xing Li, and Xuan Zhang	146
A Study on Authentication Protocol in offering Identification Synchronization and Position Detection in RFID System Soo-Young Kang, Jang-Su Park, and Im-Yeong Lee	150

Ubiquitous TV Delivery to the Masses	155
Roger Karrer and Doris Reim	
A Confidence-Based Hierarchical Feature Clustering Algorithm for Text Classification	161
The Research of Keyboard Security for u Trading Hangbae Chang, Sijin Lee, and Wonsub Eum	165
L2 Digital Literacy: Korean EFL Students use their Cell Phone Videocams to Make an L2 English Video Guide to their College Campus *Robert Christopher Meurant*	169
Service Forest: Enabling Dynamic Service Composition in Mobile Ad Hoc Networks Jun Huang, Yuebin Bai, Zhiyuan Zhang, Jing Kong, and Depei Qian	174
Mining User Models for Effective Adaptation of Context-Aware Applications Shiu Lun Tsang, and Siobhán Clarke Donghai Guan, Weiwei Yuan, Sungyoung Lee, and Young-Koo Lee	178
Bloom-Filter Based Combined Service and Route Discovery for Mobile Ad Hoc Networks	188
A Recyclable Resource Management Method for Fast Process Creation and Reduced Memory Consumption Toshihiro Tabata and Hideo Taniguchi	194
A Hybrid Genetic Scheduling Strategy of Heterogeneous Environment Benting Wan	200
UWS Broker for Ubiquitous Web Services Dynamic Discovery Il-Jin Oh, Hyung-Jun Im, Kyu-Chul Lee, Kangchan Lee, and Seungyun Lee	204
Design of Actor based Worm Modeling System Using DML Yoon Keun Oh, Woo Nyon Kim, Dong Su Kim, Soon Jwa Hong, and Ki Wook Sohn	210
Combined Architecture of Adaptive Beamforming and Blind Source Separation for Speech Recognition of Intelligent Service Robots Sungmin Woo, Sanghoon Lee, and Hong Jeong	214
Architecture-Centric Network Behavior Model Generation for Detecting Internet Worms Seung-Hyun Paek and Kiwook Sohn	220
Quarter-pel Interpolation Architecture in H.264/AVC Decoder Jongwoo Bae, Neungsoo Park, and Seong-Won Lee	224
Realistic Relighting of 2D Facial Images Using Ratio Optimization	228
A New FEC Scheme for Real-time Transmission of High Definition Video over IP Network	232
Target Classification in Sparse Sampling Acoustic Sensor Networks using DTWC Algorithm	236
Photomask Defect Extraction by Using Difference between a Reference Image and a Test Image after Illumination Adjustment Youngmin Ha and Hong Jeong	242
A Proposal on Adaptive Service Migration Framework for Device Modality Using Media Type Conversion Kiyotaka Takahashi and Tetsuo Yamabe	249
A Parallel and Memory-Efficient Mean Shift Filter on a Regular Graph Sungchan Park, Youngmin Ha, and Hong Jeong	254
A Tunnels-Between-Hosts based Method for IPv4 Application over Native IPv6 Network Xiangbin Cheng, Jun Bi;Xing Li, and Jianping Wu Xuan Zhang, Xing Li, Chongrong Li, and Dongtao Liu	260

Architecture and Performance of a Scalable Telemetry Acquisition and Distribution Infrastructure Ju Hee Bae, Christopher Howson, Won Il Lee, Jonathan Munson, and Young Ju Tak	268
ScatterPastry: An Overlay Routing Using a DHT over Wireless Sensor Networks Abd Al-Basset Al-Mamou, and Houda Labiod	274
Experiments in Mobile User Interface Adaptation for Walking Users	280
Intelligent Search Mechanism Based on Neuro-Fuzzy System for the Distributed Object Groups	285
A Self-Contained Biometric Sensor for Ubiquitous Authentication Salvatore Vitabile, Vincenzo Conti, Carmelo Militello, and Filippo Sorbello	289
Cycle Accurate Verification of Synchronous Sequential Circuit Specified with UML 2.0 Modelling	295
Two-Servers PIR Based DNS Query Scheme with Privacy-Preserving	299
Bot Detection Based on Traffic Analysis	303
A Dynamic System for Personal Communications: The Opportunistic Chat	307
An Authorization Policy Management Framework for Dynamic Medical Data Sharing Fahed Al-Nayadi and J.H. Abawajy	313
The Research of Security System for Sharing Engineering Drawings Hangbae Chang, Kyung-kyu Kim, and Yeongdeok Kim	319
GSM Churn Management Using an Adaptive Neuro-Fuzzy Inference System	323
Distributed Evaluation of Spatio-temporal Rules in a Ubiquitous Computing Environment	327
Model for Automatic Text Classification and Categorization for Image Indexing and Retrieval Rodrigo Fernandes de Mello, Josiane Maria Bueno, Luciano José Senger, and Laurence Tianruo Yang	333
VolunteerLive: Introducing Volunteer Nodes into P2P Live Streaming Xuping Tu, Hai Jin, Xiaofei Liao, Qi Huang, and Hong Yao	349
International Workshop on Intelligent Healthcare System IHS 2007	ns
Performance Analysis of OFDM System Using Adaptive FEC Code Control Technique for Mobile Wireless Communication	355
Performance Improvement of Block Error Probabilities of FS MC-CDMA System Using BCH Coding Scheme in Slow Multi-path Fading Channels Ze-Guang Jin, Heau-Jo Kang, and Yoon-Ho Kim	360
A Study on Ontology Based Medical Information System for Home Healthcare Seoksoo Kim and Jae-gu Song	364
A Study on Image Based Multimedia Reader System for Diagnosing Uterine Cancer Seoksoo Kim	368
The Development of SSLA-Tool v1.0 (Security Self-Level Assessment Tool)	372

Web Archive System for Efficient Storage of Web History Information Sunghoon Cho and Euiin Choi	378
Schemas Matching Approach Using the Functional Relations Sunghoon Cho	382
Performance Evaluation of Adaptive Modulation System with STTD in Vehicle-to-Vehicle Communication Environment Do-Wook Kang, Yang-Sun Lee, Ki-Woo Kim, Sung-Eon Cho, Se-Kab Oh, and Heau-Jo Kang	386
Healthcare Expert System Based on the Group Cooperation Model Romeo Mark A. Mateo, Bobby D. Gerardo, and Jaewan Lee	390
A Security Framework for Secure Home Networking in Ubiquitous Computing	394
HVP-Based Efficient Watermarking Scheme in DCT Domain Kihong Park, Yoonho Kim, and Heaujo Kang	398
A Study of Defense DDoS Attacks Using IP Traceback Cheol-Joo Chae, Seoung-Hyeon Lee, Jae-Seung Lee, and Jae-Kwang Lee	402
International Symposium on Intelligent and Ubiquitous Computing in Education	
IUCE 2007	
Effect of Computer Screen Back and Font Color on Chinese Reading Comprehension Shu Hua and Ran Tian	409
Modeling Virtual Laboratory Based on Distributed Measurement Hardware Resources for Measurement Technology Education	415
Yongkai Fan, Tianze Sun, Xiaolong Fu, Jun Lin, and Yangyi Sui	
Construction One E-learning Platform for Students Doing Measurement Practices	410
and Experience Sharing	419
Tongkai Fan, Tianze sun, Alaotong Fu, Sun Lin, ana Tangyi sui	

Wrapper-Based DWT-GMM for Image Segmentation

Merger & Acquisition and Bubbles on Chinese Stock Market 427

A Program Plagiarism Detection Model Based on Information Distance and Clustering ______ 431

Prediction of Amount of Imports Based on Adaptive Neuro-Fuzzy Inference System 437

The Crucial Problem of the NSS in the Ecommerce 441

A Modified Ant Algorithm for Solving the Quadratic Assignment Problem ______ 452

Machine Cognition and Learning Based on Interactive Symbolic Computation 456

Algorithm of Marriage in Honey Bees Optimization Based on the Wolf Pack Search ______ 462

446

Liu Qian and Xu Gang

Chengming Qi

Wang Ling, Liu Bo, and Gao-feng Zou

Zhipeng Chang, Liping Liu, and Zhiping Li

Dong Shaobin, Feng Yuqiang, and Wang Long
A Computer Adventure Game Applied in E-Learning

Guangxi Chen, Zhenbing Zeng, and Zhongqin Bi

Chenguang Yang, Xuyan Tu, and Jie Chen

Liang Zhang, Yue-ting Zhuang, and Zhen-ming Yuan

Pei-Chi Ho, Chun-Hsiung Huang, and Szu-Ming Chung

423

Evaluation of Hydrodynamic Performance of the Sailboard	468
	471
Evaluation of the Performance of the Double Rowing Hull Yi Mingnong, Zheng Weitao, Ma Yong, and He Haifeng	4/1
	175
Development of Intelligent Testing and Assessment System of Power Ability	
Heterogeneous Agent Beliefs and Clustered Volatility in Commodity Futures Market Li Tan, Qi Zhong-ying, Sui Xue-shen, and Lei Ying	479
Facial and Speech Recognition Emotion in Distance Education System	483
Personalized Information Recommendation System by Using Improved Adaptive Filtering Algorithm	491
International Workshop on Intelligent Pervasive Middlewa Embedded System Architectures, and RFID Applications (IPM/ESA/RFID 2007	-
A Comparative Study of Different Sensors for Smart Car Park Management	499
Field Experiment of an Extendable Traceability System: Application to the Quality Control	
of Beef-Product Distribution	503
Nobuo Okabe, Hirokazu Takatama, Kenichi Yajima, Yusuke Doi, and Atsushi Inoue	
An FR-ID Driven Holonic Control Scheme for Production Control Systems	509
Synergy Between Software Product Line and Intelligent Mobile Middleware	515
A Hybrid Middleware for RFID-based Parking Management System Using Group Communication in Overlay Networks Louie F. Cervantes, Young-Seok Lee, Hyunho Yang, and Jaewan Lee	521
Design and Validation of a Low-Power Network Node for Pervasive Applications Juan-Carlos Cano, Carlos Calafate, Pietro Manzoni, Jose-Manuel Cano, and Eva Gonzalez	527
Real-Time Embedded Architecture for Pervasive Robots Carlos Domínguez, Houcine Hassan, and Alfons Crespo	
Author Index	