

2009 International Conference on Knowledge and Systems Engineering

(KSE 2009)

**Hanoi, Vietnam
13 – 17 October 2009**



**IEEE Catalog Number: CFP0903I-PRT
ISBN: 978-1-4244-5086-2**

2009 International Conference on Knowledge and Systems Engineering

KSE 2009

Table of Contents

Message from the Conference Chair

Message from the Program Chairs

Conference Organization

Bio-Medical Information Processing

Classification of Cardiac Arrhythmias Using Interval Type-2 TSK Fuzzy System1

Phan Anh Phong and Kieu Quang Thien

Conditional Random Fields Feature Subset Selection Based on Genetic Algorithms for Phosphorylation Site Prediction7

Thanh Hai Dang, Kristof Engelen, Pieter Meysman, Kathleen Marchal, Alain Verschoren, and Kris Laukens

Hedge Algebra Based Type-2 Fuzzy Logic System and its Application to Predict Survival Time of Myeloma Patients13

Phan Anh Phong, Dinh Khac Dong, and Tran Dinh Khang

Influenza-specific Amino Acid Substitution Model.....19

Dang Cao Cuong, Le Si Quang, and Le Sy Vinh

Human Computer Interaction

A Vietnamese Question Answering System26

Dai Quoc Nguyen, Dat Quoc Nguyen, and Son Bao Pham

An Aesthetic Solution for Photo Collection Page Layout33

Xinxiao Li, Yoshifumi Takayama, Nobuo Shimizu, and Toshiki Mori

Design of Virtual Abdominal Surgery System for the UK's Royal Bournemouth Hospital39

Hui Liang and Minyong Shi

Extensible Framework for Distinct Question Answering Agents	44
<i>Hyo-Jung Oh, Chung-Hee Lee, Yi-Gyu Hwang, Jeong Hur, and Myung-Gil Jang</i>	
Implementing Adaptive Page Layout Algorithm on Embedded Devices	51
<i>Vu Quang Dung, Xinxiao Li, and Nguyen Viet Ha</i>	
Using Participatory Paradigm to Learn Human Behaviour	55
<i>Patrick Taillandier and Thanh-Quang Chu</i>	

Image Processing

A New CPT Extension Scheme for High Data Embedding Ratio in Binary Images	61
<i>Phan Trung Huy, Vu Phuong Bac, Nguyen Manh Thang, Truong Duc Manh, Vu Tien Duc, and Nguyen Tuan Nam</i>	
Adaptive Noisy Fingerprint Enhancement Based on Orientation Consistency	67
<i>Thien Hoang Van and Hoang Thai Le</i>	
Detecting Probable Regions of Humans in Still Images Using Raw Edges	73
<i>Trung Tran Ngoc, Phong Vo Dinh, and Bac Le Hoai</i>	
Fast and Realistic 2D Facial Animation Based on Image Warping	81
<i>Le Hung Bui and The Duy Bui</i>	
Novel Algorithms to Steganalysis of Uncompressed and Compressed Images	87
<i>Ho Thi Huong Thom, Ho Van Canh, and Trinh Nhat Tien</i>	
Real-time Image Processing by Cellular Neural Network Using Reaction-Diffusion Model	93
<i>Pham Hong Long and Pham Thuong Cat</i>	

Knowledge Engineering

Constructive Generation of 3COL Instances by Embedding Minimal Unsolvable Structures	100
<i>Yoshitaka Nagasawa, Kazunori Mizuno, Hitoshi Sasaki, Yasushi Miki, and Seiichi Nishihara</i>	
Ontology Learning Through Focused Crawling and Information Extraction	106
<i>Hiep Phuc Luong, Susan Gauch, and Qiang Wang</i>	
Performance Comparison of Register Allocation Algorithms in Dynamic Binary Translation	113
<i>Zhanju Cai, Alei Liang, Zhengwei Qi, Lingyan Jiang, Xiaolong Li, Haibing Guan, and Ying Chen</i>	
Representing Event Assertions in an Upper Event Ontology	120
<i>Philip H.P. Nguyen, Ken Kaneiwa, Dan R. Corbett, and Minh-Quang Nguyen</i>	
Spatial Dilemma Strategies of Intelligent Agents: Coalition Formation in Environmental Game	126
<i>Duc-Thien Nguyen and Yoshiteru Ishida</i>	

Machine Learning

A New Filter Approach to Extract Relevant Features from Mass Spectrum Datasets	130
<i>Tri-Thanh Le, Trung-Nghia Vu, Ngo Thi Thu Trang, and Ha-Nam Nguyen</i>	
Heuristic Revision by Heuristic Space Exploration	137
<i>Patrick Taillandier</i>	
Machine Learning Approaches for Mood Classification of Songs toward Music Search Engine	144
<i>Trung-Thanh Dang and Kiyooki Shirai</i>	
Multi-class Minimax Probability Machine	150
<i>Tat-Dat Dang and Ha-Nam Nguyen</i>	

Natural Language Processing

A Hybrid Approach to Vietnamese Word Segmentation Using Part of Speech Tags	154
<i>Dang Duc Pham, Giang Binh Tran, and Son Bao Pham</i>	
An Experimental Study on Lexicalized Statistical Parsing for Vietnamese	162
<i>Anh-Cuong Le, Phuong-Thai Nguyen, Hoai-Thu Vuong, Minh-Thu Pham, and Tu-Bao Ho</i>	
Vietnamese Lexical Functional Grammar	168
<i>Le Manh Hai and Phan Thi Tuoi</i>	
Vietnamese Noun Phrase Chunking Based on Conditional Random Fields	172
<i>Nguyen Thi Huong Thao, Nguyen Phuong Thai, Nguyen Le Minh, and Ha Quang Thuy</i>	

Networking

An Extreme Algorithm for Network-Topology Construction Based on Constrained Delaunay Triangulation	179
<i>Nguyen Minh Nam, Le Hoai Bac, and Nguyen Vinh Nam</i>	
A Three-tier Structured Model of Overlay Networks	185
<i>Mei Wu, Chanle Wu, and Martin Collier</i>	
A Web Enhanced Learning Support Environment Using the Ubiquity Technology	190
<i>Hitoshi Sasaki, Kazunori Mizuno, Nguyen Viet Ha, and Yasushi Miki</i>	
Building a Low-latency, Proximity-aware DHT-Based P2P Network	195
<i>Ngoc Ben Dang, Son Tung Vu, and Hoai Son Nguyen</i>	

Software Engineering

A Parameterized Unit Test Framework Based on Symbolic Java PathFinder	201
<i>Anh-Hoang Truong and Thanh-Nhan Vu</i>	
An Optimal Tableau Decision Procedure for Converse-PDL	207
<i>Linh Anh Nguyen and Andrzej Szalas</i>	

Analyzing RBAC Security Policy of Implementation Using AST	215
<i>Tuan-Hung Pham, Ninh-Thuan Truong, and Viet-Ha Nguyen</i>	
Checking the Compliance of Timing Constraints in Software Applications	220
<i>Thanh-Binh Trinh, Tuan-Anh Do, Ninh-Thuan Truong, and Viet-Ha Nguyen</i>	
Web Information Processing	
A Complexity Measure for Web Service	226
<i>Quynh Pham Thi, Dung Ta Quang, and Thang Huynh Quyet</i>	
A Fast Template-Based Approach to Automatically Identify Primary Text Content of a Web Page	232
<i>Dat Quoc Nguyen, Dai Quoc Nguyen, Son Bao Pham, and The Duy Bui</i>	
Collaborative Web for Personal Ontology Generation and Visualization for a Social Network	237
<i>Trong Hai Duong, Mohammed Nazim Uddin, and Geun Sik Jo</i>	
The Effect of Local Website Search	243
<i>Vu Thanh Nguyen and Pham Chuan</i>	
Using Hyperlink Texts to Improve Quality of Identifying Document Topics Based on Wikipedia	249
<i>Dat T. Huynh, Tru H. Cao, Phuong H.T. Pham, and Toan N. Hoang</i>	

Author Index