

**Monday, October 9, 2006**

**WELCOME MESSAGES**

**Monday, 09.00 – 09.30, Room: Tregonwell Hall**

<b>Vice Chancellors -</b>	<i>Prof. Paul Curran Bournemouth University</i>	<i>Prof. Julian Crampton University of Brighton</i>
<b>KES' 2006 General Chairs -</b>	<i>Dr Robert Howlett University Of Brighton</i>	<i>Prof. Bogdan Gabrys Bournemouth University</i>
<b>KES Conference Founder-</b>	<i>Prof. Lakhmi Jain University of South Australia</i>	

**PLENARY LECTURE**

**Monday, 09.30 – 10.30, Room: Tregonwell Hall**

**Evolving Intelligent Systems: Methods and Applications**

*Prof. Nikola Kasabov*

Chair: Gavin Finnie

**TEA AND COFFEE BREAK / POSTER PRESENTATIONS**

**Monday, 10:30 – 11.00, Room: Purbeck Lounge**

**IS04 Information Engineering & Applications in Ubiquitous Computing Environments**

Chairs: Sangkyun Kim and Hong Joo Lee

General Drawing of the Integrated Framework for Security Governance  
*Sangkyun Kim, Hong Joo Lee and Heejun Park*

A study on the Rain Attenuation Prediction Model for Ubiquitous Computing Environments in Korea  
*Dong You Choi*

A Framework for Ensuring Security in Ubiquitous Computing Environment based on Security Engineering Approach  
*Joo Young Lee and Howon Kim*

A Study on Development of Business Factor in Ubiquitous Technology  
*Hong Joo Lee, Sangkyun Kim and Choon Seong Leem*

Design of a RFID-Based Ubiquitous Comparison Shopping System  
*Kyung Jun Lee and Young Hwan Seo*

Security Techniques Based on EPC Gen2 Tag for Secure Mobile RFID Network services  
*Namje Park, Jin Kwak, Seungjoo Kim, Dongho Won and Howon Kim*

**IS22 AI for Decision Making**

Chairs: Gloria Wren, Nikhil Ichalkaranje, Lakhmi Jain

From Community Models to System Requirements: A Cooperative Multi-Agents Approach  
*Jung-Jin Yang and Kyeng Whan Jee*

Scheduling Jobs on Computational Grids Using Fuzzy Particle Swarm Algorithm

*Ajith Abraham, Hongbo Liu, Weishi Zhang and Tae Gyu Chang*

Twined Topographic Mapping for Decision Making in the Cockpit  
*Steve Thatcher and Colin Fyfe*

Agent-Enabled Decision Support for Information Retrieval in Technical Fields  
*Gloria Phillips-Wren*

Is there a Role for Artificial Intelligence in Future Electronic Support Measures?  
*Phillip Fitch*

Artificial Intelligence for Decision Making  
*Gloria Phillips-Wren and Lakhmi Jain*

Path Planning and Obstacle Avoidance for Autonomous Mobile Robots: A Review  
*Voemir Kunchev, Lakhmi Jain, Vladimir Ivancevic and Anthony Finn*

### **IS11 Communicative Intelligence**

Chairs: Toyoaki Nishida and Ngoc Thanh Nguyen

Toward a Universal Platform for Integrating Embodied Conversational Agent Components  
*Hung-Hsuan Huang, Aleksandra Cerekovic, Tsuyoshi Masuda, Yukiko Nakano, Igor Pandzic and Kateryna Tarasenko*

Flexible Method for a Distance Measure between Communicative Agents' Stored Perceptions  
*Agnieszka Pieczynska*

Assessing the Uncertainty of Communication Patterns in Distributed Intrusion Detection System  
*Krzysztof Juszczyszyn and Grzegorz Kolaczek*

## **PAPER PRESENTATIONS**

### **G03 Evolutionary Computation**

**Monday, 11.00 – 12.40, Room: Tregonwell Hall - Main**

Chair: Venky Dubey

A Hybrid Evolutionary Algorithm for the Euclidean Steiner Tree Problem using Local Searches.  
*Byounghak Yang*

Use of Cluster Validity in Designing Adaptive Gabor Wavelet Based Face Recognition.  
*Eun Sung Jung and Phill Kyu Rhee*

Self-adaptive Classifier Fusion for Expression-insensitive Face Recognition.  
*Eun Sung Jung, Soon Woong Lee and Phill Kyu Rhee*

Improved Harmony Search from Ensemble of Music Players.  
*Zong Geem*

Performance Comparison of Genetic and Tabu Search Algorithms for System Identification  
*Aytekin Bagis*

### **G13 Intelligent Signal Processing, Control and Robotics**

**Monday, 11.00 – 12.40, Room: Tregonwell Hall – BR1**

Chair: Miroslav Karny

An Implementation of KSSL Recognizer for HCI Based on Post Wearable PC and Wireless Networks

*Jung-Hyun Kim and Kwang-Seok Hong*

Intelligent Multi-Modal Recognition Interface Using Voice-XML and Embedded KSSL Recognizer

*Jung-Hyun Kim and Kwang-Seok Hong*

Sub-band Adaptive Filters with Pre-whitening Scheme for Acoustic Echo Cancellation

*Hun Choi, Hyeon-Deok Bae and Jae-Won Suh*

A Noise Cancelling Technique using Non-uniform Filter Banks and Its Implementation on FPGA

*Sang-Wook Sohn, Hyeon-Deok Bae, Hun Choi, Jae-Won Suh and Ai-Chan Yun*

Spiking Neural Network Based Classification of Task-evoked EEG Signals

*Piyush Goel, Honghai Liu, David Brown and Avijit Datta*

### **G09 Intelligent Vision and Image Processing**

**Monday, 11.00 – 12.40, Room: Tregonwell Hall – BR2**

Chair: Tuan Pham

Image Classification by Fusion for High-Content Cell-Cycle Screening

*Tuan Pham and Dat T Tran*

Adaptive Context-Aware Filter Fusion for Face Recognition on Bad Illumination

*Mi Young Young and Rezaul Bashar, Phill Kyu Rhee*

A Study on Content based Image Retrieval using Template Matching of Wavelet Transform

*Duck-won Seo, Dae-jung Kim, Hoon-sung Kwak and Kang-soo Yoo*

Semantic Decomposition of LandSat TM Image

*Miguel Torres, Giovanni Guzman, Serguei Levachkine, Marco Moreno and Rolando Quintero*

### **IS08 Immunity-based Systems: Immunoinformatics**

**Monday, 11.00 – 12.40, Room: Durley Suite**

Chair: Yoshiteru Ishida

Tolerance Dependent on Timing/Amount of Antigen-Dose in an Asymmetric Idiotypic Network

*Koji Harada*

Towards an Immunity-Based Anomaly Detection System for Network Traffic

*Takeshi Okamoto and Yoshiteru Ishida*

Migration Strategies of Immunity-based Diagnostic Nodes in Wireless Sensor Network

*Yuji Watanabe and Yoshiteru Ishida*

Asymmetric Wars between Immune Agents and Virus Agents: Approaches of Generalists versus Specialists

*Yoshiteru Ishida*

Designing an Immunity-based Sensor Network for Sensor-Based Diagnosis of Automobile Engine

*Yoshiteru Ishida*

### **G04 Machine Learning and Classical AI**

**Monday, 11.00 – 12.40, Room: Meyrick Suite 1**

Chair: Mark Girolami

An Algorithm for Eliminating the Inconsistencies Caused During Discretization

*Honghai Feng, Guoshun Chen, Yong Huang, Yueli Li, Bingru Yang and Shuo Zhao*

A Combinational Clustering Method Based on Artificial Immune System and Support Vector Machine

*Zhong-Hua Li and Hong-Zhou Tan*

User Preference through Learning User Profile for Ubiquitous Recommendation Systems

*Jung Kyung-Yong*

Automated Recognition of Cellular Phenotypes by Support Vector Machines with feature reduction

*Yong Mao, Daoying Pi, Youxian Sun, Zheng Xia, Xiaobo Zhou and S T C Wang*

Power Transformer Fault Diagnosis using Support Vector Machines and Artificial Neural Networks with Clonal Selection Algorithms Optimization

*Ming-Yuan Cho, Tsair-Fwu Lee, Shih-Wei Gau and Ching-Nan Shih*

### **G14 Intelligent Systems Applications**

**Monday, 11.00 – 12.40, Room: Meyrick Suite 2**

Chair: Anthony Finn

The Implementation of an Improved Fingerprint Payment Verification System

*Woong-Sik Kim and Weon-Hee Yoo*

Capacity Planning for Scalable Fingerprint Authentication

*Daesung Moon, Yongwha Chung, Jin-Won Park, and Byungkwan Park*

Security Analysis of Secure Password Authentication for Keystroke Dynamics

*Taekyoung Kwon and Hyunsoo Song*

A Hardware Implementation of Lightweight Block Cipher for Ubiquitous Computing Security

*Dong S. Kim, Jong Sou Park, Sung-Hwan Kim*

### **G12 Web Intelligence, Multimedia, e-Learning and Teaching**

**Monday, 11.00 – 12.40, Room: Westbourne Suite**

Chair: Andreas Nürnberger

Adaptive QOS for Using the Multimedia in e-Learning

*Hee-Seop Han and Hyeoncheol Kim*

User-Centric Multimedia Information Visualization for Mobile Devices in the Ubiquitous Environment

*Yoo-Joo Choi, Dirk Balfanz, Soo-Mi Choi, Carsten Waldeck and Seong Joon Yoo*

DAWN - A System for Context-based Link Recommendation in Web Navigation

*Sebastian Stober and Andreas Nürnberger*

Modelling Collaborators from Learner's Viewpoint Reflecting Common Collaborative Learning Experience

*Akira Komedani, Tomoko Kojiri and Toyohide Watanabe*

A Multi-Criteria Programming Model for Intelligent Tutoring Planning

*Ruihong Shi and Peng Lu*

### **G08 Miscellaneous Intelligent Algorithms**

**Monday, 11.00 – 12.40, Room: Branksome Suite 1**

Chair: Honghai Liu

Garbage Collection on the Embedded Java Virtual Machine

*Chang-Il Cha, Hyung-Jun Kim, Kyu-Jeong Huang, Sang Wook Kim, Sang Yun Lee and Hee-Sun Wan*

Design of Flexible Authorization System and Small Memory Management for XML Data Protection on the Server

*Sun Moon Jo and Weon-Hee Yoo*

A Hybrid Heuristic Algorithm for HW-SW Partitioning within Timed  
*Geguang Pu, Zhanf Chong, Zonyan Qui, Zuoquan Lin and He Jifeng*

Performance Analysis of WAP Packet Transmission Time and Optimal Packet Size in Wireless Network

*Il-Young Moon*

Using artificial intelligence in wireless sensor routing protocols.

*Julio Barbancho, Antonio Barbancho, Carlos Leon and Javier Molina*

### **G07 Hybrid Intelligent Systems**

**Monday, 11.00 – 12.40, Room: Branksome Suite2**

Chair: Vasile Palade

Architecture of RETE Network Hardware Accelerator for Real-Time Context-Aware System

*Jong Tae Kim, Jae Wook Jeon, Jee Hyung Lee, Keon Myung Lee, Seung Wook Lee, Hongmoon Wang and Dae Jin Bae*

A Combination of Simulated Annealing and Ant Colony System for the Capacitated Location-Routing Problem

*Lyamine Bouhaf, Amir Hajjam and Abder Koukam*

An Automatic Approach for Efficient Text Segmentation

*Keke Cai, Jiajun Bu, Chun Chen and Peng Huang*

Design and Configuration of a Machine Learning Component for User Profiling in a Declarative Design Environment

*Georgios Bardis, Georgios Miaoulis and Dimitri Plemenos*

Emotional Intelligence: Constructing user stereotypes for affective bi-modal interaction

*Efhtymios Alepis and Maria Virvou*

### **LUNCH BREAK**

**12.40 – 13.40, Room Purbeck Hall**

### **PLENARY LECTURE**

**Monday, 13.40 – 14.40, Room: Tregonwell Hall**

#### **Feature Selection in Pattern Recognition**

*Prof. Josef Kittler*

### **PAPER PRESENTATION SESSIONS**

#### **G02 Fuzzy and Neuro-Fuzzy Systems**

**Monday, 14.40 – 16.00, Room: Tregonwell Hall - Main**

Chair: Frank Klawonn

Fuzzy Logic Controller for a Turbojet Engine of Unmanned Aircraft.

*Min Seok Jie, Kang Woong Lee and Eun Jong Mo, Gyo Young Hong*

Fuzzy Linear Programming Approach to Multi-mode Distribution Planning Problem.  
*Bilge Bilgen and Imran Ozkarahon*

Hardware Implementation of Fuzzy Controllers: Approach and Constraints.  
*Amol Deshmukh and Preeti Bajaj*

### **G13 Intelligent Signal Processing, Control and Robotics**

**Monday, 14.40 – 16.00, Room: Tregonwell Hall – BR1**

Chair: Miroslav Karny

Learning Control via Neuro-Tabu-Fuzzy Controller  
*Sarawut Sujitjorn and Sudarat Khwan-On*

DSP Based Implementation of Current Mode Fuzzy Gain Scheduling of PI Controller for Single Phase UPS Inverter  
*Emine Dogru Bolat*

### **IS19 Industrial Applications of Intelligent Systems**

**Monday, 14.40 – 16.00, Room: Tregonwell Hall – BR2**

Chairs: Robert Howlett, Bogdan Gabrys and David Brown

Neural Network Classification of Diesel Spray Images  
*Simon Walters, Cyril Crua, Robert Howlett and Shaun Lee*

Molecular Sequence Alignment for Extracting Answers for Where-typed Questions from Google Snippets  
*John Atkinson and Alejandro Figueroa*

Temperature Field Estimation for the Pistons of Diesel Engine 4112  
*Zuoqin Qian, Honghai Liu, Guangde Zhang and David Brown*

Fuzzy and Neuro-fuzzy Techniques for Modelling and Control  
*Shaun Lee, Bob Howlett and Simon Walters*

Clustering for Data Matching  
*Edward Tersoo Apeh and Bogdan Gabrys*

Intelligent Optical Otolith Classification for Species Recognition of Bony Fish  
*Dionisios Lefkaditis, Graeme Awcock and Bob Howlett*

### **IS41 Chance Discovery**

**Monday, 14.40 – 16.00, Room: Durley Suite**

Chairs: Akinori Abe, Hiroko Shoji and Yukio Ohsawa

Closed-ended Questionnaire Data Analysis  
*Leuo-Hong Wang, Chau-Fu Hong and Chia-Ling Hsu*

Strategies Emerging from Game Play: Experience from an Educational Game for Academic Career Design  
*Yoshikiyo Kato and Shoji Hiroko*

Concept Sharing Through Interaction: The Effect of Information Visualization for Career Design  
*Hiroko Shoji, Toshikazu Kato and Kaori Komiya*

What Should be Abducible for Abductive Nursing Risk Management?  
*Akinori Abe, Kiyoshi Kogure, Noriaki Kuwahara and Hiromi Ozaku*

#### **GO4 Machine Learning and Classical AI**

**Monday, 14.40 – 16.00, Room: Meyrick Suite 1**

Chair: Mark Girolami

A Semi-Naive Bayesian Learning Method for Utilizing Unlabeled Data

*Chang-Hwan Lee*

Quantitative and ordinal association rules mining (QAR mining)

*Filip Karel*

Extraction of Spatial Rules Using a Decision Tree Method: A Case Study for Urban Growth Modelling

*Jungyeop Kim, Yunhee Kang, Soohong Park and Sungeon Hong*

Classification using Multiple and Negative Target Rules

*Jiuyong Li and Jason Jones*

#### **G06 Knowledge Based and Expert Systems**

**Monday, 14.40 – 16.00, Room: Meyrick Suite 2**

Chair: Anne Håkansson

Using Prototypical Cases and Prototypicality Measures for Diagnosis of Dysmorphic Syndromes

*Rainer Schmidt and Tina Waligora*

ISOR: An Expert-System for Investigations of Therapy Inefficacy

*Rainer Schmidt and Olga Vorbieva*

Reengineering for Knowledge in Knowledge Based System

*Anne Håkansson and Ronald Hartung*

Knowledge Representation for Knowledge Based Leadership System

*Ronald Hartung and Anne Håkansson*

#### **G05 Agent Systems**

Monday, 14.40 – 16.00, Room: Westbourne Suite

Chair: Ngoc Thanh Nguyen

Coherent formation for agents using flocking and cellular automata

*Leo Bi and Richard Hall*

Managing Emergent Processes

*John Debenham and Simeon Simoff*

Teamwork Coordination in Large-Scale Mobile Agent Networks

*Gordan Jezic, Mario Kusek and Vjekoslav Sinkovic*

Real-time Search Algorithms for Exploration and Mapping

*In-Cheol Kim*

#### **G01 Artificial Neural Networks and Connectionists Systems**

Monday, 14.40 – 16.00, Room: Branksome Suite 1

Chair: Ryohei Nakano

Integration of Ant Colony SOM and K-means for Clustering Analysis: An Improved Text Categorization Methodology Based on Second Order.

*Sheng-Chai Chi and Chih Chieh Yang*

An Improved Text Categorisation Methodology Based on Second Order Probabilistic Feature Extraction and Neural Network Classifiers.

*Dimitrios Karras*

An Improved OIF Elman Neural Network with Profit Factors and its Applications to Stock Market.

*Limin Wang, Yanchun Liang, Xiaohu Shi, Ming Li, Xuming Han*

### **IS49 Human Intelligent Technology**

**Monday, 14.40 – 16.00, Room: Branksome Suite 2**

Chair: Vesa Niskanen

On Models in Fuzzy Propositional Logic

*Jorma Mattila*

Is Soft Computing and Its Applications in Technology and Medicine Human-Friendly?

*Rudolf Seising and Jeremy Bradley*

From Vague or Loose Concepts to Hazy and Fuzzy Sets: Human Understanding Versus Exact Science

*Rudolf Seising and Jeremy Bradley*

New Classifier Based on Fuzzy Level Set Subgrouping

*Paavo Kukkurainen and Pasi Luukka*

Modelling Innovativeness and Creativity in Business Planning

*P Kyro and V Niskanen*

### **TEA AND COFFEE BREAK / POSTER PRESENTATIONS – (Information same as morning break)**

**Monday, 16.00 – 16.30, Room: Purbeck Lounge**

### **PAPER PRESENTATION SESSIONS**

#### **G09 Intelligent Vision and Image Processing**

**Monday, 16.30 – 18.10, Room: Tregonwell Hall - Main**

Chair: Tuan Pham

Vision-based Semantic-map Building and Localization

*Seungdo Jeong, Byung-Uk Choi, Jounghoon Lim and Il Hong Suh*

*Merging and Arbitration Strategy for Robust Eye Location*

*Koh Eun Jin and Rhee Phill Kyu*

Head Gesture Recognition Using Feature Interpolation

*Yeongu Kang and P.K. Rhee*

A Stereovision based Advanced Airbag System

*Seok-Joo Lee, Min-Soo Jang, Yong-Guk Kim, Hyun-Gu Lee and Gwi-Tae Park*

Context-based Approach for Human Gesture Analysis

*Chil-Woo Le, Jae-Yong Oh and Yang Weon Lee*

#### **G13 Intelligent Signal Processing, Control and Robotics**

**Monday, 16.30 – 18.10, Room: Tregonwell Hall – BR1**

Chair: Miroslav Karny



Image-Based Robust Control of Robot Manipulators in the Presence of Uncertainty  
*Min Seok Jie and Kang Woong Lee*

Real Time Obstacle Avoidance for Mobile Robot using Limit-cycle and Vector Field Method  
*Min Seok Jie, Kang Woong Lee, Joong Hwan Baek and Yeh Sun Hong*

Developing Knowledge-Based Security-Sense of Networked Intelligent Robots  
*Omar Faruque Sarker, Changttwan Kim, Bum-Jae You and Mohammed Golam Sidi*

Autonomous Action Generation of Humanoid Robot from Natural Language  
*Hirokazu Watabe and Tsukasa Kawaoka*

Robust Positioning a Mobile Robot with Active Beacon Sensors  
*JangMyung Lee, SungBu Kim and Jaemu Yun*

### **G14 Intelligent Systems Applications**

**Monday, 16.30 – 18.10, Room: Tregonwell Hall – BR2**

Chair: Anthony Finn

Intelligent Environment for Training of Power Systems Operators  
*Gustavo Arroyo-Figueroa, Yasmin Hernandez and Luis Enrique Sucar*

Building a Better Air Defence System Using Genetic Algorithms  
*Millie Pant and Kusum Deep*

Artificial Immune System-based Customer Data Clustering in an e-Shopping Application  
*George Tsihrintzis, D N Sotiropoulos, A Savvopoulos and M Virvou*

A GA Driven Intelligent System for Medical Diagnosis  
*Ioannis Hatzilygeroudis, Grigorios Beligiannis, Constantinos Koutsojannis and Jim Prentzas*

Combined Gene Selection Methods for Microarray Data Analysis  
*Hong Hu, Grant Darggard, Jiuyong Li and Hua Wang*

### **IS26 Computational Intelligence Approaches and methods for Security Engineering**

**Monday, 16.30 – 18.10, Room: Durley Suite**

Chair: Tai-hoon Kim

Application Presence Fingerprinting for NAT-aware Router  
*Jun Bi, Leo Zhao and Miao Zhang*

Interaction for Intelligent Mobile Systems  
*Michael O'Grady, Stephen Keegan and Gregory O'Hare*

Design of an Intelligent SOAP Message Service Processor for Enhancing Mobile Web Service  
*Gil-Cheol Park and Seoksoo Kim*

Convergence Rate in an Intelligent Self-organizing Feature Map Using Dynamic Gaussian Function  
*Geuk Lee, Min Wook Kil, Tai Hoon Kim and Seoksoo Kim*

Development of an Attack Packet Generator Applying an NP to Intelligent APS  
*Wankyung Kim and Wooyoung Soh*

Class Based Intelligent Community System for Building Ubiquitous Education & Medical Information System  
*Seoksoo Kim*

## **IS41 Chance Discovery**

**Monday, 16.30 – 18.10, Room: Meyrick Suite 1**

Chairs: Akinori Abe, Hiroko Shoji and Yukio Ohsawa

The Repository Method for Chance Discovery in Financial Forecasting  
*Alma Garcia Almanza and Edward Tsang*

Emerging Novel Scenarios of New Product Design with Teamwork on Scenario Maps Using Pictorial KeyGraph  
*Kenichi Horie and Yukio Ohsawa*

Creative Design by Bipartite KeyGraph Based Interactive Evolutionary Computation  
*Chao-Fu Hong, Mu-Hua Lin, Hsiao-Fang Yang and Geng-Sian Lin*

Discovering Chances for Organizational Training Strategies from Intra-Group Relations  
*Ruediger Oehlmann and Patel Meera*

Trust, Ethics and Social Capital on the Internet: An Empirical Study Between Japan, USA and Singapore  
*Yumiko Nara*

## **G06 Knowledge Based and Expert Systems**

**Monday, 16.30 – 18.10, Room: Meyrick Suite 2**

Chair: Anne Håkansson

Modelling of the Vocational Suggestion with Restrictions - (Graph Theory Approach)  
*Gregor Molan and Marija Molan*

Robust Eye Detection Method for Varying Environment using Illuminant Context-Awareness  
*Mi Young Nam, Eun Jin Kho and Phill Kyu Rhee*

INMA: A Knowledge-based Authoring Tool for Music Education  
*Maria Virvou, Aristomenis Lampropoulos and George Tsihrintzis*

ALIMOS: A Middleware System for Accessing Digital Music Libraries in Mobile Services  
*George Tsihrintzis, Aristomenis Lampropoulos and Paraskevi Lampropoulou*

Personalization Method for Tourist Point of Interest Recommendation  
*Cho Jungwon, Kang Eui-Young and Kim Hanil*

## **G05 Agent Systems**

**Monday, 16.30 – 18.10, Room: Westbourne Suite**

Chair: Ngoc Thanh Nguyen

Real-time Control of Decentralized Autonomous Flexible Manufacturing Systems by using Memory and Oblivion  
*Hidehiko Yamamoto, Qudeiri Jaber and Jamali Mohammed*

Adaptive QoS Control Mechanism in Flexible Videoconference System  
*Sung-Doke Lee, Dong-S Han and Sanggil Kang*

Multi-agent Architecture for Automating Satellite Control Operations Planning and Execution  
*Adriana Bianco, Andreia Aquino, Luciana Cardoso, Mauricio Ferreira and José Demisio Silva*

Web-based Agent System for Interworking Between Wired Network Devices and Mobile Devices  
*Sang Tae Kim, Hyun Deok Kim and Keehyun Park*

Load Protection Model based on Intelligent Agent Regulation  
*Dragan Jevtic*

### **G08 Miscellaneous Intelligent Algorithms**

**Monday, 16.30 – 18.10, Room: Branksome Suite 1**

Chair: Honghai Liu

Design and Evaluation of a Rough Set-Based Anomaly Detection Scheme Considering Weighted Feature Values

*Bae Ihn-Han, Lee Hwa Ju and Lee Kyung-Sook*

ATM Based on SPMF

Dae-Young Choi

Using Rough Set to Induce More Abstract Rules from Rule Base

*Honghai Feng, Yong Huang, Yueli Li, Shuo Zhao, Baoyan Liu and Li Yun He*

Dynamic Calculation Method of Degree of Association between Concepts

*Noriyuki Okumura, Tsukasa Kawaoka, Araki Takayoshi and Hirokazu Watabe*

Combining Fuzzy Cognitive Maps with Support Vector Machines for Bladder Tumour Grading

*Elpiniki Papageorgiou, George Georgoulas, Petros Groumpos, Chrysostomos Stylios and George Nikiforidis*

Nature Inspiration for Support Vector Machines

*Davide Anguita and Dario Sterpi*

### **IS20 Nature Inspired Data Mining**

**Monday, 16.30 – 18.10, Room: Branksome Suite 2**

Chairs: Davide Anguita and Bogdan Gabrys

Discrete and Continuous Aspects of Nature Inspired Methods

*Martin Macas, Miroslav Bursa and Lenka Lhotska*

Social Capital in Online Social Networks

*Przemyslaw Kazienko and Katarzyna Musial*

Nature-Inspiration on Kernel Machines: Data Mining for Continuous and Discrete Variables

*Cecilio Angulo, N ria Agell and Francisco Ruiz*

Testing CAB-IDs Through Mutations: On the Identification of Network Scans

*Emilio Corchado, Alvaro Herrero and Jose Saiz*

### **ROUND TABLE DISCUSSION**

**18.10 – 19.00, Tregonwell Hall**

**Do Small and Medium Enterprises (SMEs) need Smart Systems?**

Chairs: Bob Howlett, Bogdan Gabrys and David Brown

### **CIVIC RECEPTION**

**19.00 – 19.45, Purbeck Hall**

**Tuesday, October 10, 2006**

## **PAPER PRESENTATION SESSIONS**

### **IS72 Intelligent Agents and Their Applications**

**Tuesday, 08.00 – 09.20, Room: Tregonwell Hall – Main**

Chairs: Dharmendra Sharma and Wanli Ma

Using Windows Printer Drivers for Solaris Applications; an Application of Multiagent System  
*Wanli Ma, Dharmendra Sharma and Abhishek Mathur*

A Novel approach to Programming  
*Dharmendra Sharma, Wanli Ma, Dat Tran and Mary Anderson*

Personalisation of Web Search: An Agent Based Approach  
*Ligon Gopinathan, Bala Balachandarn and Dharmendra Sharma*

Autonomy & Intelligence - Opportunistic Service Delivery in Mobile Computing  
*Jiangyan Chen, Michael O'Grady and Gregory O'Hare*

### **IS21 Intelligent Agents and Their Applications**

**Tuesday, 08.00 – 09.20, Room: Tregonwell Hall – BR1**

Chairs: Pierre Urlings, Jeffrey Tweedale, Christos Sioutis and Nikhil Ichalkaranje

The Equilibrium of Agent Mind: The Balance Between Agent Theories and Practice  
*Nikhil Ichalkaranje, Lakhmi Jain, Christos Sioutis, Jeffrey Tweedale and Pierre Urlings*

Agent Cooperation and Collaboration  
*Christos Sioutis and Jeffrey Tweedale*

Trust in Multi-Agent Systems  
*Jeffrey Tweedale and Philip Cutler*

Intelligent Agents and Their Applications  
*Jeffrey Tweedale and Nikhil Ichalkaranje*

### **IS69 Intelligent and Secure Digital Content Management**

**Tuesday, 08.00 – 09.20, Room: Tregonwell Hall – BR2**

Chairs: Geuk Lee and Il Seok Ko

A Design and Development of the Mobile Multimedia Game Context  
*Na Yun Ji and Ko Il Seok*

Development of Oval based Vulnerability Management Tool (OVMT) on a Distributed Network Environment  
*Geuk Lee, Youngsub Kim and SangJo Youk*

A Study on a Design of Efficient Electronic Commerce System  
*Na Yun Ji, Ko Il Seok and Kwak Jong Min*

A Scheduling Middleware for Data Intensive Applications on a Grid  
*Moo-hun Lee, Eui-in Choi and Jang-uk In*

Development of a Monitoring Module for ITS (Intrusion Tolerant System)  
*Wankyung Kim, Hwangrae Kim, Jinsub Park and Wooyoung Soh*

Design of DRM-LMS Model in M-learning Environment  
*Seoksoo Kim, Mingyun Kang, Min Wook Kil, Geuk Lee and Gil-cheol Park*

A Design of Hybrid Mobile Multimedia Game Content  
*Il Seok Ko, Yun Ji Na*

## **IS24 Skill Acquisition and Ubiquitous Human Computer Interaction**

**Tuesday, 08.00 – 09.20, Room: Durley Suite**

Chairs: Hirokazu Taki and Satoshi Hori

An Interpretation Method for Classification Trees in Bio-data Mining

*Kozakura Shigeki, Taki Hirokazu, Miura Hirokazu, Ogawa Hisashi, Matsuda Noriyuki and Hori Satoshi*

An Expansion of Space Affordance by Sound Beams and Tactile Indicators

*Taizo Miyachi, Jens Balvig and Jun Moriyama*

Automatic Discovery of Basic Motion Classification Rules

*Satoshi Hori, Mizuho Sasaki and Hirokazu Taki*

Adequate RSSI Determination Method by Making Use of SVM for Indoor Localization

*Hirokazu Miura, Noriyuki Matsuda, Hlrikazu Taki, Sakamoto Junichu and Noriyuki Abe*

## **IS05 Computational Intelligence for Signal and Image Processing**

**Tuesday, 08.00 – 09.20, Room: Meyrick Suite 1**

Chair: Yen-Wei Chen

Intensity Modulated Radiotherapy Target Volume Definition by Means of Wavelet Segmentation

*Tsair-Fwu Lee, Pei-Ju Chao, Chao-Ji Chou, Fu-Min Fang and Eng-Yen Huang*

Enhancing Global and Local Contrast for Image Using Discrete Stationary Wavelet Transform and Simulated Annealing Algorithm

*Zhang Changjiang*

An Efficient Unsupervised MRF Image Clustering Method

*Yimin Hou, Lei Gu and Xiangmin Lun*

A SVM-Based Blur Identification Algorithm for Image Restoration and Resolution Enhancement

*Jianping Qiao and Ju Liu*

## **IS73 Signal Processing Techniques for Knowledge Extraction and Information Fusion**

**Tuesday, 08.00 – 09.20, Room: Meyrick Suite 2**

Chairs: Danilo Mandic, Tomasz Rutkowski, Toshihisa Tanaka and Martin Golz

Signal Reconstruction by Projection Filter with Preservation of Preferential Components

*Akira Hirabayashi and Naito Takeshi*

Sensor Network Localization Using Least Squares Kernel Regression

*Anthony Kuh, Danilo Mandic and Chaopin Zhu*

Acoustic Parameter Extraction From Occupied Rooms Utilizing Blind Source Separation

*Yonggang Zhang, Jonathon Chambers, Trevor Cox, Paul Kendrick and. Francis Li*

An Online Method For Detecting Nonlinearity Within a Signal

*Beth Jelfs, Christos Boukis, Mo Chen, Temujin Gautama, Su Lee Goh, Phebe Vayanos, Tomasz Rutkowski, Tony Khu and Danilo Mandic*

Using Hierarchical Filters to Detect Sparseness in Unknown Channels

*Christos Boukis and Lazaros Polymenakos*

## **G05 Agent Systems**

**Tuesday, 08.00 – 09.20, Room: Westbourne Suite**

Chair: Ngoc Thanh Nguyen

Reserve Price Recommendation by Similarity-Based Time Series Analysis for Internet Auction Systems

*Min Jung Ko and Yong Kyu Lee*

Using Intelligent Agent for an E-Commerce Bargain System

*Kuang-Ku C, Pao-hua Chou and Meng-Jiun Wu*

Automatic Classification for Grouping Designs in Fashion Design Recommendation Agent System

*Jung Kyung-Yong*

Agent Behaviour in Double Auction Electronic Market for Communication Resources

*Krunoslav Trzec, Ignac Lovrek and Branko Mikac*

**G11 Knowledge Management and Ontologies**

**Tuesday, 08.00 – 09.20, Room: Branksome Suite 1**

Chair: Edward Szczerbicki

A Fuzzy Extension of Description Logic ALC with Comparison Expressions

*Dazhou Kang, Yanhui Li, Jianjiang Lu and Baowen Xu*

A Distributed and Fuzzy Extension of Description Logics

*Baowen Xu and Jianjiang Lu*

Similarity Metrics for Set of Experience Knowledge Structure

*Cesar Sanin and Edward Szczerbicki*

Knowledge Management Based on Dynamic and Self-adjusting Fuzzy Models

*Cezary Orłowski and Zdzisław Kowalczyk*

**IS44 Advanced Groupware and Network Services**

**Tuesday, 08.00 – 09.20, Room: Branksome Suite 2**

Chairs: Jun Munemori, Takashi Yoshino and Takaya Yuizono

Wireless Interent Service of Visited Mobile ISP Subscriber on GPRS Network

*Jeong-Hyun Park and Boo-Hyung Lee*

An Exploratory Analysis on User Behavior Regularity in the Mobile Internet

*Toshihiko Yamakami*

Reliable Communication Methods for Mutual Complementary Networks

*Takashi Kaneyama, Hiroshi Mineno, Takashi Furumura, Kunchiro Yamada and Tadanori Mizuno*

**PLENARY LECTURE**

**Tuesday, 09.20 – 10.20, Room: Tregonwell Hall**

**Evolvable Genetic Robot in a Ubiquitous World**

*Prof. Jong-Hwan Kim*

**TEA AND COFFEE BREAK / POSTER PRESENTATIONS**

**Tuesday, 10:20 – 11.00, Room: Purbeck Lounge**

**IS52 Intelligent and Cognitive Communication Systems**

Chair: Jaehak Chung

Intelligent Channel Time Allocation in Simultaneously Operating Piconets Based on IEEE 802.15.3 MAC

*Peng Xue, Peng Gong and Duk Kyung Kim*

An Intelligent Synchronization Scheme for WLAN Convergence Systems

*Sekchin Chang and Jaehak Chung*

Aggressive Sub-channel Allocation Algorithm for Intelligent Transmission in Multi-user OFDMA System

*SangJun Ko, KyungHi Chang, Joo Heo and Yupeng Wang*

A Novel Spectrum Sharing Scheme Using Relay Station with Intelligent Reception

*Jaehwan Kim, Joonhyuk Kang and Junkyu Lee*

Intelligent Beamforming for Personal Area Network Systems

*Younggun Ji, Jaehak Chung, Seokhyun Kim and Hongwon Lee*

Multiband Radio Resource Allocation for Cognitive Radio Systems

*Yangsoo Kwon, Jaehak Chung, Joohee Kim and Jungwon Suh*

### **IS66 Artificial Intelligence Applications in Power Electronics**

Chair: Jong Tae Kim

Full Fuzzy-Logic-Based Vector Control for Permanent Magnet Synchronous Motors

*Jae-Sung Yu, Byoung-Kuk Lee, Chung-Yuen Won and Dong-Wook Yoo*

Artificial Intelligent Application to Service Restoration Considering Load Balancing In Distribution Networks

*Sang Yule Choi, Jea Sang Cha and Myong-Chul Shin*

Minimum Cost Operation Mode and Minimum Loss Operation Mode of Power System: Operation Mode Selection Based on Voltage Stability

*Sang-Joong Lee*

Optimal Voltage and Reactive Power Control of Local Area Using Genetic Algorithm

*Hak-Man Kim, Tae-Kyoo Oh, Myong-Chul Shin, Chang-Dae Yoon and Jong-Yul Kim*

Equivalent Electric Circuit Modeling of Differential Structures in PCB with Genetic Algorithm

*Jong Tae Kim, Yong Ki Beon and Jong Kang Park*

Rule-Based Expert System for Designing DC-DC Converters

*Jong Tae Kim and Seok Min Yoon*

### **IS21 Intelligent Agents and Their Applications**

Chairs: Pierre Urlings, Jeffrey Tweedale, Christos Sioutis and Nikhil Ichalkaranje

Trust in LORA: Towards a Formal Definition of Trust in BDI Agents

*Bevan Jarvis and Lakhmi Jain*

Teamwork and Simulation in Hybrid Cognitive Architecture

*Jinsong Leng, Colin Fyfe and Lakhmi Jain*

### **IS31 Neural Information Processing for Data Mining**

Chairs: Ryohei Nakano and Kazumi Saito

Improving Convergence Performance of PageRank Computation based on Step-length Calculation Approach

*Kazumi Saito and Ryohei Nakano*

Finding Nominally Conditioned Multivariate Polynomials Using a Four-layer Perceptron Having Shared Weights

*Yusuke Tanahashi, Kazumi Saito, Daisuke Kitakoshi, and Ryohei Nakano*

## **PAPER PRESENTATION SESSIONS**

### **G03 Evolutionary Computation**

**Tuesday, 11.00 – 12.40, Room: Tregonwell Hall – Main**

Chair: Richard Hall

Towards Self-configuring Evolvable FPGA using Feedback Cross-checking.

*Robert Ross and Richard Hall*

A Self-adjusting Load Sharing Mechanism Including An Improved Response Time using Evolutionary Information.

*Seonghoon Lee, DongLee Shim and Donyoung Cho*

A New Memetic Algorithm using Particle Swarm Optimization and Genetic Algorithm

*Sang Moon Soak, Byung Ha Ahn, Sang Wook Lee and Nitaigour Premchand Mahalik*

Mathematical and Empirical Analysis of the Real World Tournament.

*Sang-Wook Lee, Byung-Ha Ahn, Nitaigour Premchand Mahalik and Sang-Moon Soak and M G Jean*

Link Mass Optimization of Serial Robot Manipulators Using Genetic Algorithm

*Serdar Kucuk and Zafer Bingul*

### **G09 Intelligent Vision and Image Processing**

**Tuesday, 11.00 – 12.40, Room: Tregonwell Hall – BR1**

Chair: Tuan Pham

Adaptive Implicit-Camera Calibration in Photogrammetry Using Anfi

*Erkan Besdok and Pinar Civicioglu*

Applying a-priori Knowledge for Compressing Digital Elevation Models

*Giovanni Guzman, Marco Moreno, Rolando Quintero and Miguel Torres*

Evaluation of the perceptual performance of fuzzy image quality measures

*Dietrich Van der Weken, Etienne Kerre, Wilfried Philips and Ewout Vansteenkiste*

A New Color Image Enhancement Algorithm for Camera-Equipped Mobile Telephone

*Zhengyou Wang, Guobin Chen, Shiqian Wu, Quan Xue and Weiming Zeng*

Human Arm-Motion Classification Using Qualitative Normalised Templates

*Chee Seng Chan, Honghai Liu and David Brown*

### **IS73 Signal Processing Techniques for Knowledge Extraction and Information Fusion**

**Tuesday, 11.00 – 12.40, Room: Tregonwell Hall – BR2**

Chairs: Danilo Mandic, Tomasz Rutkowski, Toshihisa Tanaka and Martin Golz

Auditory Feedback for Brain Computer Interface Management - An EEG Data Sonification Approach

*Tomasz Rutkowski*

Analysis of the quasi-brain-death EEG data based on a robust ICA approach



*Jianting Cao*

A Flexible Method for Envelope Estimation in Empirical Mode Decomposition  
*Yoshikazu Washizawa, Andrzej Cichocki, Danilo Mandic and Toshihisa Tanaka*

The Performance of LVQ Based Automatic Relevance Determination Applied to Spontaneous Biosignals  
*Martin Golz and David Sommer*

Alertness Assessment Using Data Fusion and Discriminatory Ability of LVQ-Networks  
*Udo Trutschel, David Sommer, Acacia Aguirre, Todd Dawson and Bill Sirois*

### **IS26 Computational Intelligence Approaches and methods for Security Engineering**

**Tuesday, 11.00 – 12.40, Room: Durley Suite**

Chair: Taihoon Kim

Intelligent Anonymous Secure E-Voting Scheme  
*Hee-Un Park and Dong-Myung Shin*

Intelligent Method for Building Security Countermeasures  
*Tai-hoon Kim and Sun-myounghwang*

Intelligent Frameworks for Encoding XML Elements using Mining Algorithm  
*Haeng-Kon Kim*

Graphical Knowledge Template of CBD Meta-Model  
*Haeng-Kon Kim*

Actively Modifying Control Flow of Program for Efficient Anomaly Detection  
*Kohei Tatara, Kouichi Sakurai and Toshihiro Tabata*

### **IS05 Computational Intelligence for Signal and Image Processing**

**Tuesday, 11.00 – 12.40, Room: Meyrick Suite 1**

Chair: Yen-Wei Chen

Regularization for Super-Resolution Image Reconstruction  
*Vivek Bannore*

Dynamic Similarity Kernel for Visual Recognition  
*Wang Yan, Qingshan Liu and Hanqing Lu*

Genetic Algorithms for Optimization of Boids Model  
*Xinyin Huang, Yen-Wei Chen, Kanami Kobayashi and Zensho Nakao*

Segmentation of MR Images Using Independent Component Analysis  
*Yen-Wei Chen*

Color Image Watermarking Based on Spatio-chromatic ICA  
*Hien Thai Duy*

### **IS70 Business Knowledge Modelling and Maintenance**

**Tuesday, 11.00 – 12.40, Room: Meyrick Suite 2**

Chairs: Ernesto Damiani and Paolo Ceravolo

SBEAVER: A Tool for Modeling Business Vocabularies and Business Rules  
*Maurizio De Tommasi and Angelo Corallo*

A Semantic Recommender Engine enabling an eTourism Scenario

*Gianluca Lorenzo, Angelo Corallo and Gianluca Solazzo*

A Legal Architecture for Digital Ecosystems  
*Gianluca Solazzo, Virginia Cisternino and Angelo Corallo*

Evolutionary ANNs for improving accuracy and efficiency in Document Classification Methods  
*Paolo Ceravolo and Antonia Azzini*

A Methodology for Determining Creditability of Recommending Agents  
*Omar Hussain, Elizabeth Chang, Farookh Hussain and Tharam Dillon*

### **IS09 Ambient Intelligence: Algorithms, Methods and Applications**

**Tuesday, 11.00 – 12.40, Room: Westbourne Suite**

Chair: Dorothy Monekosso

Dynamic Cooperative Information Display in Mobile Environments  
*Christophe Jacquet, Yacine Bellik and Yolaine Bourda*

Extracting Activities from Multimodal Observation  
*Oliver Brdiczka, James Crowley, Jerome Maisonnasse and Patrick Reignier*

Using Ambient Intelligence for Disaster Management  
*Juan Carlos Augusto, Liming Chen and Jun Liu*

Dynamic Scene Reconstruction For 3D Virtual Guidance  
*Lucio Marcenaro, Alessandro Calbi and Carlo Regazzoni*

### **G14 Intelligent Systems Applications**

**Tuesday, 11.00 – 12.40, Room: Branksome Suite 1**

Chair: Simon Walters

A Discretization Algorithm that Keeps Positive Regions of All the Decision Classes  
*Honghai Feng, LiYun He, Baoyan Liu, Jixing Lv and Bingru Yang*

Forecasting Region Search of Moving Objects  
*Jun Feng, Toyohide Watanabe, Linyan Wu and Yuelong Zhu*

An Index-Based Time-Series Subsequence Matching Under Time Warping  
*Sang Kim, Jaehyuk Cha, Byoungchol Chang and Miyoung Shin*

An Intrinsic Technique Based on Discrete Wavelet Decomposition for Analysing Phylogeny  
*Atulya Nagar, Dilbag Sokhi and Hissam Tawfik*

Analysis of Selfish Behaviours on Door-to-Door Transport System  
*Naoto Mukai, Jun Feng and Toyohide Watanabe*

### **G14 Intelligent Systems Applications**

**Tuesday, 11.00 – 12.40, Room: Branksome Suite 2**

Chair: Anthony Finn

Towards an Intelligent Local Web Search in Telematics  
*Dae-Young Choi*

A Method of Recommending Buying Points for Internet Shopping Malls  
*Eun Sill Jang and Yong Kyu Lee*

A Sensuous Association Method Using an Association Mechanism for Natural Machine Conversion  
*Seiji Tsuchiya, Tsukasa Kawaoka and Hirokazu Watabe*

Motion-based Interaction on the Mobile Device for User Interface  
*Jonghun Baek, Ik-Jin Jang, Hyon Deok Kim and Jae-Soo Cho and Byoung-Ju Yun*

Role-task Model for Advanced Task-based Service Navigation System  
*Fukazawa Yusuke, Fujii Kunihiro, Kurakake Shoji and Naganuma Takefumi*

## **LUNCH BREAK**

**12.40 – 13.40, Purbeck Hall**

## **PLENARY LECTURE**

**Tuesday, 13.40 – 14.40, Room: Tregonwell Hall**

### **Ant Colony Optimisation**

*Prof. Luca Maria Gambardella*

Chair: Paolo Ceravolo

## **PAPER PRESENTATION SESSIONS**

### **IS71 Innovations in Intelligent Systems and Their Applications**

**Tuesday, 14.40 – 16.00, Room: Tregonwell Hall – Main**

Chairs: Dharmendra Sharma and Bala Balachandran

How to Solve a Multicriterion Problem for which Pareto Dominance Relationship Cannot be Applied? A Case Study from Medicine.

*Crina Grosan, Ajith Abraham, Stefan Tigan and Tae-Gyu Chang*

Interpretation of Group Measurements of Validation Data Using Fuzzy Techniques in an Object-Oriented Approach

*Eduardo Mosqueira-Rey and Vicente Moret-Bonillo*

Accuracy of Neural Network Classifiers as a Property of the Size of the Data Set

*Patricia Crowther and Robert Cox*

Investigating Security in Multi-tree Based Technique in RFID Systems

*Xu Huang and Dharmendra Sharma*

An Improved ALOHA Algorithm for RFID Tag Identification

*Xu Huang*

A Dynamic Threshold Technique for XML Data transmission on Networks

*Xu Huang, Alexander Ridgewell and Dharmendra Sharma*

Distributed Face Recognition: A Multi-agent Approach

*Girija Chetty and Dharmendra Sharma*

### **IS35 Intelligent Information Management in a Knowledge-based Society**

**Tuesday, 14.40 – 16.00, Room: Tregonwell Hall – BR1**

Chairs: Toyohide Watanabe and Naoto Mukai

Analysis for Usage of Routing Panels in Evacuation

*Toyohide Watanabe and Naoki Harashina*

R-Tree Based Optimization Algorithm for Dynamic Transport Problem

*Naoto Mukai, Jun Feng and Toyohide Watanabe*

Knowledge-Based System for Die Configuration Design in Cold Forging

*Osamu Takata, Tsukasa Mitani, Yuji Mure, Isao Nagasawa and Masanobu Umeda*

A Web-Based System for Gathering and Sharing Experience and Knowledge Information in Local Crime Prevention

*Masato Goto, Akira Hattori, Takami Yasuda and Shigeki Yokoi*

An Automatic Indexing Approach for Private Photo Searching Based on E-mail Archive

*Taketoshi Ushiyama and Toyohide Watanabe*

The Scheme Design for Active Information System

*Ping Zong and Jun Qin*

### **IS11 Communicative Intelligence**

**Tuesday, 14.40 – 16.00, Room: Tregonwell Hall – BR2**

Chairs: Toyoaki Nishida and Ngoc Thanh Nguyen

An Introduction to Fuzzy Propositional Calculus Using Proofs from Assumptions

*Iwan Tabakow*

Fuzzy-Neural Web Switch Supporting Differentiated Service

*Leszek Borzemski and Krzysztof Zatwarnicki*

Image Watermarking algorithm Based on the Code Division Multiple Access Technique

*Fan Zhang, Xinhong Zhang, Guosheng Yang and Xiangxing Liu*

Construction of Symbolic Representation from Human Motion Information

*Daisaku Arita, Yutaka Araki, Tsutomu Hasegawa, Ryo Kurazume, Rin-ichiro Taniguchi and Seiichi Uchida*

### **IS28 Logic Based Intelligent Information Systems**

**Tuesday, 14.40 – 16.00, Room: Durley Suite**

Chair: Kazumi Nakamatsu

Paraconsistent Artificial Neural Network: Applicability in Computer Analysis of Speech Productions

*Jair Minoro Abe, João Almeida Prado and Kazumi Nakamatsu*

The Study of the Robust Learning Algorithm for Neural Networks

*Shigenobu Yamawaki*

Logic Determined by Boolean Algebras with Conjugate

*Michiro Kondo, Jair Abe and Kazumi Nakamatsu*

An Intelligent Technique Based on Petri Nets for Diagnosability Enhancement of Discrete Event Systems

*MuDer Jeng and YuanLin Wen*

### **IS30 Knowledge-based Multi-Criteria Decision Support**

**Tuesday, 14.40 – 16.00, Room: Meyrick Suite 1**

Chair: Hsuan-Shih Lee

Fuzzy Logic Based Mobility Management for 4G Heterogeneous Networks

*Jin-Long Wang and Chen-Wen Chen*

On-line association rules mining with dynamic support

*Hsuan-Shih Lee*

A Fuzzy Multiple Criteria Decision Making Model for Airline Competitiveness Evaluation

*Ming-Tao Chou and Hsuan-Shih Lee*

Goal Programming Method for Constructing Additive Consistency Fuzzy Preference Relations  
*Wei-Kuo Tseng and Hsuan-Shih Lee*

A Multiple Criteria Decision Making Model Based on Fuzzy Multiple Objective DEA  
*Chen-Huei Yeh and Hsuan-Shih Lee*

A Fuzzy Multiple Objective DEA for the Human Development Index  
*Hsin-Hsjung Fan, Hsuan-Shih Lee and kuang Lin*

### **IS31 Neural Information Processing for Data Mining**

**Tuesday, 14.40 – 16.00, Room: Meyrick Suite 2**

Chairs: Ryohei Nakano and Kazumi Saito

Visualization Architecture Based on SOM for Two-Class Sequential Data  
*Ken-ichi Fukui, Kazumi Saito, Masahiro Kimura and Masayuki Numao*

Approximate Solutions for the Influence Maximization Problem in a Social Network  
*Masahiro Kimura and Kazumi Saito*

Prediction of the O-glycosylation Sites in Protein by Layered Neural Networks and Support Vector Machines

*Ikuko Nishikawa, Hirotaka Sakamoto, Ikue Nouno Takeshi Iritani, Kazutoshi Sakakibara and Masahiro Ito*

A Bayesian Approach to Emotion Detection in Dialogist's Voice for Human Robot Interaction

*Shohei Kato, Yoshiki Sugino and Hidenori Itoh*

### **IS36 Knowledge/Software Engineering Aspects of Intelligent Systems**

#### **Applications**

**Tuesday, 14.40 – 16.00, Room: Westbourne Suite**

Chair: Maria Virvou

Facial Expression Classification: Specifying Requirements for an Automated System  
*George Tsihrintzis and Ioanna-Ourania Stathopoulou*

On the Software Engineering Aspects of Educational Intelligence

*Dimitris Kalles and Thanassis Hadzilacos*

Feature Model Based on Description Logics

*Shaofeng Fan and Zhang Naixiao*

PNS: Personalized Multi-Source News Delivery

*Georgios Paliouras, Angelos Alexopoulos, Alexandros Mouzakidis, Christos Ntoutsis and Christos Skourlas*

### **G11 Knowledge Management and Ontologies**

**Tuesday, 14.40 – 16.00, Room: Branksome Suite 1**

Chairs: Helena Azczerbicka and Cezary Orlowski

Kn104owledge Based Tools to Support the Structural Design Process

*Carlos Toro, Juanjo Falcon, Oaquin Oyarzun, Jorge Posada and Maite Termen*

Project situations aggregation to identify cooperative problem solving strategies

*Chaker Djaiz and Matta Nada*

Incorporating Semantics into GIS Applications

*Sergei Levachkine, Miguel Martinez, Miguel Torres and Karina Verastegui*

Intelligent reduction of tire noise

*Matthias Becker and Helena Szczerbicka*

**IS44 Advanced Groupware and Network Services**

**Tuesday, 14.40 – 16.00, Room: Branksome Suite 2**

Chairs: Jun Munemori, Takashi Yoshino and Takaya Yuizono

Remote Plug and Play USB Devices for Mobile Terminals

*Jungo Kuwahara, Hiroshi Mineno, Kijoko Tanaka, Hideharu Suzuki and Norihiro Ishikawa*

SIP-based Streaming Control Architecture for Mobile Personal Area Networks

*Hiroshi Mineno, Naoto Adachi, Tsutomu Eto, Kijoko Tanaka, Hideharu Suzuki, Norihiro Ishewaka and Tadanori Mizuno*

Development of Middleware GLIA for Connective Wide Collaborative Space with Networked I/O Device

*Takaya Yuizono, Shinichi Nishimura and Jun Munemon*

Development and Evaluation of No-record Chat System against Screen Capture

*Takashi Yoshino and Taksumo Matsuno*

**TEA AND COFFEE BREAK / POSTER PRESENTATIONS – (Information same as morning break)**

**Tuesday, 16.00 – 16.30, Room: Purbeck Lounge**

**PAPER PRESENTATION SESSIONS**

**IS40 Hybrid Intelligent Systems in Medicine and Health Care**

**Tuesday, 16.30 – 17.50, Room: Tregonwell Hall**

Chairs: Ioannis Hatzilygeroudis and Constantinos Koutsojannis

Predictive Adaptive Control of the Bispectral Index of the EEG (BIS) - Using the Intravenous Anaesthetic Drug Propofol

*Catarina Nunes, Pedro Amorim, João Lemos, Hugo Magalhães and Teresa Mendonça*

Using Aggregation Operators to Personalize Agent-based Medical Services

*David Isern, Aida Valls and Antonio Moreno*

Shifting Patterns Discovery in Microarrays with Evolutionary Algorithms

*Raul Giraldez, Jesus Aguilar-Ruiz and Beatriz Pontes*

A Similarity Search Algorithm to Predict Protein Structures

*Yi-Ping Phoebe Chen and Jiyuan An*

Fuzzy-Evolutionary Synergism in an Intelligent Medical Diagnosis System

*Constantinos Koutsojannis and Ioannis Hatzilygeroudis*

**IS33 Sharing of Learning Knowledge in an Information Age**

**Tuesday, 16.30 – 17.50, Room: Tregonwell Hall – BR1**

Chairs: Toyohide Watanabe and Tomoko Kojiri

Reflection by Knowledge Publishing

*Akihiro Kashihara and Yuasuhiro Kamoshita*

A System Framework for Bookmark Sharing Considering Differences in Retrieval Purposes

*Shoichi Nakamura, Emi Igarashi, Maiko Ito, Youzou Miyadera, Hirokazu Shirai and Setsuo Yokoyama*

Development of Know-how Information Sharing System in Care Planning Processes - Mapping New Care Plan into Two-dimensional Document Space  
*Kaoru Eto, Yasuo Kabasawa and Tatsunori Matsui*

Hybrid Approach of Augmented Classroom Environment with Digital Pens and Personal Handhelds  
*Motoki Miura and Susumu Kunifuji*

### **IS11 Communicative Intelligence**

**Tuesday, 16.30 – 17.50, Room: Tregonwell Hall –BR2**

Chairs: Toyoaki Nishida and Ngoc Thanh Nguyen

Harmonisation of Soft Logical Inference Rules in Distributed Decision Systems  
*Juliusz Kulikowski*

An Algorithm for Inconsistency Resolving in Recommendation Web-based Systems  
*Michal Malski*

Distributed Class Code and Data Propagation with Java  
Dariusz Krol and Grzegorz Kukla

Conflicts of Ontologies: Classification and Consensus-based Methods for Resolving  
Ngoc Thanh Nguyen

### **IS18 Neuro-fuzzy Techniques for Image Processing Applications**

**Tuesday, 16.30 – 17.50, Room: Durley Suite**

Chairs: Baturone Iluminada and Brox Poedad

Efficient Distortion Reduction of Mixed Noise Filters by Neuro-Fuzzy Processing  
*Mehmet Emin Yuksel and Alper Basturk*

Texture Segmentation with Local Fuzzy Patterns and Neuro-Fuzzy Decision Support  
*Ciro Castiello, Laura Caponetti, Anna Maria Fanelli and Przemyslaw Gorecki*

Lineal Image Compression Based on Lukasiewicz's Operators  
*Nashaat M. Hussein Hassan and Angel Barriga*

Modelling Coarseness in Textures by Means of Fuzzy Sets  
*Jesús Chamorro-Martínez, Elena Galán-Perales, Daniel Sánchez and Jose M. Soto-Hidalgo*

Fuzzy Motion Adaptive Algorithm for Video De-interlacing  
*Piedad Brox Jiménez, Iluminada Baturone Castillo, Felipe Fernández Hernández, Julio Gutiérrez Ríos and Santiago Sánchez Solano*

### **IS45 Computational Methods for Intelligent Neuro-fuzzy Applications**

**Tuesday, 16.30 – 17.50, Room: Meyrick Suite 1**

Chair: Gwi-Tae Park

Evaluation of the Distributed Fuzzy Contention Control for IEEE 802.11 Wireless LANs  
*Young-Joong Kim, Jeong-On Lee and Myo-Taeg Lim*

Improved Genetic Algorithm-based FSMC Design for Multi-nonlinear System  
*Jung-Shik Kong and Jin-Geol Kim*

The Interactive Feature Selection Method Development For An ANN Based Emotion Recognition System  
*Chang-Hyun Park and Kwee-Bo Sim*

Supervised IAFC Neural Network Based on the Fuzzification of Learning Vector Quantization  
*Yong Soo Kim, Yong Sun Baek, Zeungnam Bien, Suntae Hwang, Sukhoon Kang and Sang Wan Lee*

### **IS46 Intelligent Information Processing for Remote Sensing**

**Tuesday, 16.30 – 17.50, Room: Meyrick Suite 2**

Chairs: Manuel Grana and Richard Duro

Low Cost Stabilized Platform for Airborne Sensor Positioning  
*Francisco Gonzalez Castaño, F Git-Casterineira, JM Pousada-Carballo, PS Rodriguez-Henandes, JC Burgillo-Rial and I Dasil-Outes*

Comparison of Squall Line Positioning Methods Using Radar Data  
*Ka Yan Wong and Chi Lap Yip*

On Clustering Performance Indices for Multispectral Images  
*Manuel Grana, Josune Gallego, Teresa Garcia-Sebastian and Carmen Hernandez*

Aerial Photo Image Retrieval using Adaptive Image Classification  
*Sung Baik, Moon Seok Jeong and Ran Bait*

Integration of Spatial Information in Hyperspectral Imaging for Real Time Quality Control in an Andalusite Processing Line  
*Richard Duro, Bouza Bellas, Fernando Lopez Peña and Abraham Prieto*

A Windowing/Pushbroom Hyperspectral Imager  
*Raúl de la Fuente, Beatriz Couce, Carlos Montero-Orille and Xesus Prieto-Blanco*

### **IS47 Evolutionary and Self-organising Sensors, Actuators and Processing Hardware**

**Tuesday, 16.30 – 17.50, Room: Westbourne Suite**

Chairs: Daniel Polani and Mikhail Prokopenko

Genetic Programming of a Microcontrolled Water Bath Plant  
*Douglas Dias, Marco Pacheco and José Amaral*

Symbiotic Sensor Networks in Complex Underwater Terrains: a Simulation Framework  
*Vadim Gerasimov, Gerry Healy, Mikhail Prokopenko, Peter Wang and Astrid Zeman*

Making Sense of the Sensory Data: Coordinate Systems by Hierarchical Decomposition  
*Attila Egri-Nagy and Chrystopher Nehaniv*

Biologically-inspired Visual-motor Coordination Model in a Navigation Problem  
*Jacek Jelonek and Maciej Komosinski*

A Self-Organizing Sensing System for Structural Health Management  
*Nigel Hoschke, Chris Lewis, Don Price, Andrew Scott, Graeme Edwards and Adam Batten*

### **G11 Knowledge Management and Ontologies**

**Tuesday, 16.30 – 17.50, Room: Branksome Suite 1**

Chair: Edward Szczerbicki

Algorithms for Finding and Correcting Four Kinds of Data Mistakes in Information Table  
*Honghai Feng, LiYun He, Yong Huang, Baoyan Liu, and Bingru Yang*

Relevance Ranking of Intensive Care Nursing Narratives  
*Hanna Suominen, Tapio Pahikkala, Marketta Hiissa, Tuija Lehtikunnas, Barbro Back, Helena Karsten, Sanna Salentera and Tapio Salakoski*

Unification of Protein Data and Knowledge Sources



*Amandeep Sidhu , Elizabeth Chang and Tharam Dillon*

Ontology Fusion with Complex Mapping Patterns  
*Jinguang Gu and Yi Zhou*

### **IS44 Advanced Groupware and Network Services**

**Tuesday, 16.30 – 17.50, Room: Branksome Suite 2**

Chairs: Jun Munemori, Takashi Yoshino and Takaya Yuizono

The Home Network of a Mutual Complement Communication System by Wired and Wireless  
*Kunihiro Yamada, Takashi Furumura, Yashihira Seno, Yukihisa Naoe, Keniche Katazawa, Toru Shimizu, Koji Yoshida, Manason Kojima, Hiroshi Mineno and Tadanin Mizuno*

Interaction Between Small Size Device and Large Screen in Public Space  
*Shin Takahashi, Chunming Jin and Jiro Tanaka*

Development of a Medical Information Gathering System using JMA Standard Health Insurance Claim System ORCA on IPv6 Network  
*Takashi Yoshino, Yoko Yukemira, Kunikazy Fujii, Yoshiki Kusomoto and Masayuki Irie*

A Prototype of a Chat System Using Message Driven and Interactive Actions Character  
*Junko Itou, Kenji Hashio and Jun Munemori*

### **ROUND TABLE DISCUSSION**

**17.50 – 19.00, Tregonwell Hall**

#### **Intelligent Autonomous Defence Systems**

Chair: Anthony Finn

### **CONFERENCE DINNER**

**BIC PAVILION: 19.30**

## **Wednesday, October 11, 2006**

### **PAPER PRESENTATION SESSIONS**

#### **WS01 Experience Management and Engineering Workshop**

**Wednesday, 08.00 – 09.20, Room: Tregonwell Hall – Main**

Chairs: Zhaohao Sun, Gavine Finnie and Robert Howlett

The “5P” Apprenticeship Which Based the Chinese Traditional Culture  
*Qin Gu and Liang Liang*

A Unified 2D Representation of Fuzzy Reasoning, CBR and Experience Based Reasoning  
*Zhaohao Sun and Gavin Finnie*

MBR Comparison in Spatial database Using Semi-approximation Scheme  
*Jongwan Kim, Chong-Sun Hwang, SeokJin Im, Sang-Won Kang and SeongHoon Lee*

Trace-based Framework for Experience Management and Engineering  
*Julien Laflaquière, Alain Mille, Yannick Prié and Lotfi Settouti*

#### **IS27 Hybrid Information Technology Using Computational Intelligence**

**Wednesday, 08.00 – 09.20, Room: Tregonwell Hall – BR1**

Chair: Tai-hoon Kim

Two-Phase Identification Algorithm Based on Fuzzy Set and Voting for Multi-Sensor Data Fusion System  
*Sukhoon Kang*

UI-PMAC Model Suitable for Ubi-Home Gateway in Ubiquitous Intelligent Environment  
*Jong Hyuk Park, Jae-Hyuk Jang, Byoung-Soo Koh and Sangjin Lee*

An One-Time Password Authentication Scheme for Secure Remote Access in Intelligent Home Networks  
*Il-sun You*

An Intelligent and Efficient Traitor Tracing Scheme for Ubiquitous Environment  
*Deok-Gyu Lee, Im-Yeong Lee and Seo Il Kang*

Security Requirements for Ubiquitous Software Development Site  
*Tai-hoon Kim*

**IS33 Sharing of Learning Knowledge in an Information Age**  
**Wednesday, 08.00 – 09.20, Room: Tregonwell Hall – BR2**

Chairs: Toyohide Watanabe and Tomoko Kojiri

A System Assisting Acquisition of Japanese Expressions through Read-Write-Hear-Speaking and Comparing between Use Cases of Relevant Expressions  
*Kohji Itoh, Jun'ichi Kakegawa, Hiroshi Nakamura and Shunsuke Unno*

Group Collaboration Support in Learning Mathematics  
*Tomoko Kojiri, Yosuke Murase, Toyohide Watanabe*

The Supporting System for Distant Learning Students of Shinshu University  
*Hisayoshi Kunimune, Yasushi Fuwa, Masaaki Niimura and Mika Ushiro*

An Interactive Multimedia Instruction System: IMPRESSION for Multipoint Synchronous Online Classroom Environment  
*Yuki Higuchi, Kentaro Go and Takashi Mitsuishi*

**IS67 Soft Computing Approaches to Management Engineering**  
**Wednesday, 08.00 – 09.20, Room: Durley Suite**

Chair: Junzo Watada

DNA-Based Evolutionary Algorithm for Cable Trench Problem  
*Don Jeng, Ikno Kim and Junzo Watada*

The Influences of R&D Expenditures on Knowledge-based Economy in Taiwan  
*Lilly Lin*

A Process Schedule Analyzing Model Based on Grid Environment  
*Huey-Ming Lee, Mu-Hsiu Hsu and Tsang-Yean Lee*

Fuzzy Set Theoretical Approach to the RGB Colour Triangle  
*Naotoshi Sugano*

**IS60 Intelligent Techniques in the Stock Market**  
**Wednesday, 08.00 – 09.20, Room: Meyrick Suite 1**

Chair: Norio Baba and Marina Resta

On the Profitability of Scalping Strategies Based on Neural Networks  
*Marina Resta*

Effect of Moving Averages in the Tickwise Tradings in the Stock Market  
*Felix Steichert, Masayuki Iwata and Mieko Tanaka-Yamawaki*

A New Scheme for Interactive Multi-Criteria Decision Making  
*Felix Steichert and Mieko Tanaka-Yamawaki*

Utilization of NNs for Improving the Traditional Technical Analysis in the Financial Markets  
*Norio Baba*

### **IS06 Soft Data Analysis**

**Wednesday, 08.00 – 09.20, Room: Meyrick Suite 2**

Chairs: Mika Sato-Ilic and Lakhmi Jain

Equi-sized, Homogeneous Partitioning  
*Frank Klawonn and Frank Höppner*

Nonparametric Fisher Kernel Using Fuzzy Clustering  
*Ryo Inokuchi and Sadaaki Miyamoto*

Finding Simple Fuzzy Classification Systems with High Interpretability through Multiobjective Rule Selection  
*Hisao Ishibuchi, Isao Kuwajim and Yusuke Nojima*

Clustering Mixed Data Using Spherical Representaion  
*Yoshiharu Sato*

Fuzzy Structural Classification Methods  
*Mika Sato-Ilic and Tomoyuki Kuwata*

Innovations in Soft Data Analysis  
*Mika Sato-Ilic and Lakhmi Jain*

### **IS58 Intelligent Multimedia Solutions and Security in the Next Generation Mobile Information Systems**

**Wednesday, 08.00 – 09.20, Room: Westbourne Suite**

Chairs: Dong Chung Lee

An Efficient 3-D Positioning Method from Satellite Synthetic Aperture Radar Images  
*Yeong-Sun Song, Choung-Hwan Park and Hong-Gyoo Sohn*

Generalized Logit Model of Demand Systems for Energy Forecasting  
*Hong Sok Kim, Hoon Chang and Young- Kyun Lee*

Secure Authentication Protocol in Mobile IPv6 Networks  
*Jung Doo Koo, Jungsook Koo and Dong Chun Lee*

Experiments and Experiences on the Relationship between the Probe Vehicle Size and the Travel Time Collection Reliability  
*Chungwon Lee, Jeong Hyun Kim, Taehee Kim and Seungjae Lee*

Conversion Scheme for Reducing Security Vulnerability in IPv4/ IPv6 Networks  
*Do Hyeon Lee and Jeom Goo Kim*

Improved Location Management for Reducing Traffic Cost in 3G Mobile Networks  
*Jae Young Koh*

### **IS13 Knowledge-based Systems for e-Business**

**Wednesday, 08.00 – 09.20, Room: Branksome Suite 1**

Chairs: Tsuda Kazuhiko and Masakazu Takahashi

Estimation of FAQ Knowledge Bases by Introducing Measurements  
*Fuketa Masao*

Efficient Stream Delivery over Unstructured Overlay Network by Reverse-query Propagation  
*Yoshikatsu Fujita, Yasufumi Saruwatari, Kazuhiko Tsuda and Jun Yoshida*

A Method for Development of Adequate Requirement Specification in the Plant Control Software Domain  
*Masakazu Takahashi, Yoshinori Fukue, Takashi Kawasaki and Satoru Takahashi*

### **IS65 Creativity Support Systems**

**Wednesday, 08.00 – 09.20, Room: Branksome Suite 2**

Chairs: Susumu Kumifuji and Motoki Miura

Structure-based Categorization of Program to Enable Awareness About Programming Skills  
*Kei Kato and Toyohide Watanabe*

On-screen note pad for creative activities  
*Norikazu Iwamura, Kazuo Misue and Jiro Tanaka*

IdeaCrepe: Creativity Support Tool With History Layers  
*Nagayoshi Nakazono, Kazuo Misue and Jiro Tanaka*

Personalized Voice Navigation System for Creative Working Environment  
*Tanaka Kaoru and Kunifuji Susumu*

An Editing and Displaying System of Olfactory Information for the Home Video  
*Dong Wook Kim, Susumu Kunifuji and Kazushi Nishimoto*

A Divergent Style of Learning Support Using a Thesaurus Diagram  
*Chie Shimodaira, Susumu Kunifuji and Hiroshi Shimodaira*

### **PLENARY LECTURE**

**Wednesday, 09.20 – 10.20, Room: Tregonwell Hall**

#### **Industrial Applications of Intelligent Systems**

*Dr Ben Azvine*

Chair: Ignac Lovrek

### **TEA AND COFFEE BREAK / POSTER PRESENTATIONS**

**Wednesday, 10:20 – 11.00, Room: Purbeck Lounge**

#### **IS40 Hybrid Intelligent Systems in Medicine and Health Care**

Chairs: Ioannis Hatzilygeroudis and Constantinos Koutsojannis

Using Multi-Agent Systems to Manage Community Care  
*Martin Beer and Richard Hill*

Gene Ranking from Microarray Data for Cancer Classification--a Machine Learning Approach  
*Roberto Ruiz, Raul Giraldez and Beatriz Pontes*

H3: A Hybrid Handheld Healthcare Framework  
*Seung-won Hwang*

Hybrid Intelligent Medical Tutor for Atheromatosis  
*Katerina Kabassi, George Tsihrintzis and Maria Virvou*

Evolutionary Tuning of Combined Multiple Models  
*Gregor Stiglic and Peter Kokol*

## **Miscellaneous**

### **IS47 Evolutionary and Self-organising Sensors, Actuators and Processing Hardware**

Predicting Cluster Formation in Decentralized Sensor Grids  
*Astrid Zeman and Mikhail Prokopenko*

### **IS45 Computational Methods for Intelligent Neuro-fuzzy Applications**

Genetically Optimized Fuzzy Set-based Polynomial Neural Networks Based on Information Granules with the Aid of Symbolic Genetic Algorithms  
*Tae-Chon Ahn, Sung-Kwun Oh and Seok-Beom Roh*

Walking Pattern Analysis of Humanoid Robot Using Support Vector Regression  
*Dongwon Kim and Gwi-Tae Park*

### **IS28 Logic Based Intelligent Information Systems**

Intelligent Paraconsistent Logic Controller And Autonomous Mobile Robot Emmy II  
*Jair Minoro Abe, Michiro Kondo, Kazumi Nakamatsu, Germano Torres and Cláudio Rodrigo Torres*

EVALPSN Based Intelligent Drivers' Model  
*Kazumi Nakamatsu, Jair Abe and Michiro Kondo*

### **G02 Fuzzy and Neuro-Fuzzy Systems**

The Design of Self-tuning Strategy of Genetically Optimised Fuzzy-PI Controller for HVDC System.  
*Tae-Chon Ahn, Zhong-xian Wang and Jueng-je Yang*

### **IS62 Human Computer Intelligent Systems**

Time Series Data Classification Using Recurrent Neural Network with Ensemble Learning  
*Shinichi Oeda, Takumi Ichimura and Ikusaburo Kurimoto*

Expressed Emotion Calculation Method according to the User's Personality  
*Kazuya Mera and Takumi Ichimura*

### **IS55 Intelligent Agents and Their Applications**

An Overview of Agent Coordination and Cooperation  
*Angela Consoli, Jeff Tweedale and Lakhimi Jain*

## **PAPER PRESENTATION SESSIONS**

### **WS01 Experience Management and Engineering Workshop**

**Wednesday, 11.00 – 12.40, Room: Tregonwell Hall – Main**

Chairs: Zhaohao Sun, Gavin Finnie, Robert Howlett

Annotations: A Way to Capture Experience  
*Gaëlle Lortal, Myriam Lewkowicz and Amalia Todirascu-Courtier*

Cell-based Distributed Index for Range Query Processing in Wireless Data Broadcast Systems

*SeokJin Im, Chong-Sun Hwang, Sang-Won Kang, Jongwan Kim, SeongHoon Lee and MoonBae Song*

Genetic-Fuzzy Modeling on High Dimensional Spaces  
*Joon-Min Gil and Seong-Hoon Lee*

Considering a Semantic Prefetching Scheme for Cache Management in Location-Based Services

*Sang-Won Kang, Chong-Sun Hwang, SeokJin Im, Jongwan Kim and SeongHoon Lee*

A Unified Framework for u-Edutainment Development of Using e-Learning and Ubiquitous Technologies

*SangHyun Jang, YunHee Kang and Bokyung Kye*

### **IS27 Hybrid Information Technology Using Computational Intelligence**

**Wednesday, 11.00 – 12.40, Room: Tregonwell Hall – BR1**

Chair: Tai-hoon Kim

New Design of PMU for Monitoring and Control of Wide Area Intelligent System

*Hak-Man Kim, Jin-Hong Jeon, Myong-Chul Shin and tae-Kyoo Oh*

E Business Agent Orientated Component Based Development for Business Intelligence

*Ho-Jun Shin, Haeng-Kon Kim and Bo-Yeon Shim*

Security Intelligence: Web Contents Security System for Semantic Web

*Nam-Deok Cho, Eun-ser Lee and Hyun-gun Park*

Performance Analysis of Location Estimation Algorithm Using an Intelligent Coordination Scheme in RTLS

*Chang Oh, Seung Jeong, Hyun Lee and Noon-Sung Lee*

Performance Analysis of Location Estimation Algorithm Using an Intelligent Coordination Scheme in RTLS

*Chang Oh, Seung Jeong, Hyun Lee and Noon-Sung Lee*

### **IS67 Soft Computing Approaches to Management Engineering**

**Wednesday, 11.00 – 12.40, Room: Durley Suite**

Chair: Junzo Watada

Spatial Equilibrium Model on Regional Analysis for the Trade Liberalisation of Fluid Milk in Taiwan

*Lily Lin*

Analysing the Density of Subgroups in Valued Relationships Based on DNA Computing

*Ikno Kim, Don Jyh-Fu Jeng and Junzo Watada*

Structural Learning of Neural Networks for Forecasting Stock Prices

*Junzo Watada*

Customer Experience Management Influencing on Human Kansei to MOT

*Shin'ya Nagasawa*

Getting Closer to the Consumer - The Digitization of Content Distribution

*Hisao Shiizuka and Peter Anshin*

### **IS68 Knowledge Processing in Intelligent and Cognitive Communicative Systems**

**Wednesday, 11.00 – 12.40, Room: Meyrick Suite 1**

Chair: Radoslaw Katarzyniak

An Action Planning Module Based on Vague Knowledge Extracted from Past Experiences

*Grzegorz Popek*

An Approach to Resolving Semantic Conflicts of Temporally-vague Observations in Artificial Cognitive Agent

*Wojciech Lorkiewicz*

Neural Network Approach for Learning of the World Structure by Cognitive Agents

*Agnieszka Pieczynska and Jaroslaw Drapala*

Towards a Computational Framework for Modeling Semantic Interactions in Large Multiagent Communities

*Krzysztof Juszczyszyn*

Grounding Crisp and Fuzzy Ontological Concepts in Artificial Cognitive Agents

*Radoslaw Piotr Katarzyniak*

### **IS25 IATA – Intelligent Agent Technology and Applications**

**Wednesday, 11.00 – 12.40, Room: Meyrick Suite 2**

Chair: Raymond Lee

Ontia iJADE: An Intelligent Ontology-based Agent Framework for Semantic Web Service

*Toby H.W. Lam and Raymond S.T. Lee*

iJADE FreeWalker: An Ontology-based Tourist Guiding System

*Toby H.W. Lam and Raymond S.T. Lee*

iJADE Content Management System (CMS) ? An Intelligent Multi-Agent Based Content Management System with Chaotic Copyright Protection Scheme

*Shu Tak Lee, Chun Lun Chan and Yiu Wai Mak*

Agent-Controlled Distributed Resource Sharing to Improve P2P File Exchanges in User Networks

*Francisco Gonzalez-Castano, J C Burguillo-Rial, E Costa-Montenegro and J Vales-Alonso*

An Agent-based System Supporting Collaborative Product Design

*Jian Xun Wang and Ming Xi Tang*

### **IS01 Knowledge-Based Interface Systems (1)**

**Wednesday, 11.00 – 12.40, Room: Westbourne Suite**

Chairs: Naohiro Ishii and Yuji Iwahori

Web Site Off-line Structure Reconfiguration: A Web User Browsing Analysis

*Sebastian Rios, Terumasa Aoki, Juan Velasquez and Hiroshi Yasuda*

New Network Management Scheme with Client's Communication Control

*Kazuya Odagiri, Naohiro Ishii, Masaharu Tadauchi and Rihito Yaegashi*

Prediction of Electric Power Generation of Solar Cell using the Neural Network

*Masashi Kawaguchi, Sachiyoshi Ichikawa, Naohiro Ishii, Takashi Jimbo and Masaaki Okuno*

Text Classification: Combining Grouping, LSA and kNN vs Support Vector Machine

*Naohiro Ishii, Yongguang Bao, Takeshi Murai and Takahiro Yamada*

Particle Filter Based Tracking of Moving Object from Image Sequence

*Yuji Iwahori, Yoshinori Adachi, Hidenori Itoh, Haruki Kawanaka and Toshihiro Takai*

### **IS13 Knowledge-based Systems for e-Business**

**Wednesday, 11.00 – 12.40, Room: Branksome Suite 1**

Chairs: Tsuda Kazuhiko and Takahashi Masakazu

Express Emoticons Choice Method for Smooth Communication of e-Business

*Nobuo Suzuki and Kazuhiko Tsuda*

A new Approach for Improving Field Association Term Dictionary Using Passage Retrieval  
*Kazuhiro Morita*

Analysis of Stock Return Using Textual and Numerical Data Through Text Mining  
*Satoru Takahashi, Hiroshi Takahashi, Masakazu Takahashi and Kazuhiko Tsuda*

A New Approach for Automatic Building Field Association Words using Selective Passage Retrieval  
*El-Sayed Atlam, Elmarthomy Ghada, Kazuhiro Morita and Jun-ichi Aoe*

Building New Field Association Term Candidates Automatically by Search Engine  
*Masao Fuketa, El-Sayed Atlam, Elmarthomy Ghada, Kazuhiro Morita and Jun-ichi Aoe*

### **G14 Intelligent Systems Applications**

**Wednesday, 11.00 – 12.40, Room: Branksome Suite 2**

Chair: Anthony Finn

Fault-tolerant Cluster Management Tool for Self-Managing of Cluster DBMS  
*Jae-Woo Chang, Yong-Ki Kim and Young-Chang Kim*

Speed Control of Averaged DC Motor Drive System BY Using Neuro-PID Control  
*Ali Bekir Yildiz and Mehmet Zeki Bilgin*

Automatic Detection of SLS Violation Using Knowledge based Systems  
*Pedro Alipio, Paulo Carvalho and Jose Neves*

Two-Level Dynamic Programming Hardware Implementation for Real Time Processing  
*Yong Kim and Hong Jeong*

Towards the Formalization of Innovating Design: The TRIZ Example  
*Cecilia Zanni and François Rousset*

### **LUNCH BREAK**

**12.40 – 13.40, Purbeck Hall**

### **PLENARY LECTURE**

**Wednesday, 13.40 – 14.40, Room: Tregonwell Hall**

**Towards Multimodal Computing: Extracting Information from Signal Nonlinearity and Determinism**

*Dr Danilo Mandic*

### **PAPER PRESENTATION SESSIONS**

**IS43 Context Aware Evolvable and Adaptable Systems and Their Applications**

**Wednesday, 14.40 – 16.00, Room: Tregonwell Hall – Main**

Chairs: Phill Kyu Rhee and Rezaul Bashar

Context-Aware Application System for Music Playing Services  
*Jae-Woo Chang and Yong-Ki Kim*

Query Based Summarization using Non-negative Matrix Factorization  
*Ju-Hong Lee, Chan-Min Ahn, Sun Park, Jun Sik Hong and Seok-Ju Chun*



Intelligent Secure Web Service using Context Information  
*Shin Woochul, Yoo Sang Bong and Li Xun*

Study of Intelligent Guide System using Soft Computing  
*Woo-Kyung Choi, Sang-Hyung Ha, Hong-Tae Jeon and Seong-Joo Kim*

### **IS62 Human Computer Intelligent Systems**

**Wednesday, 14.40 – 16.00, Room: Tregonwell Hall – BR1**

Chairs: Takumi Ichimura and Kazuya Mera

Real Time Head Nod and Shake Detection Using HMMs  
*Yeon Gu Kang, PK Rhee and Hyun Jea Joo*

Construction and Evaluation of Text-dialog Corpus with Emotion Tags Focusing on Facial Expression in Comics  
*Masato Tokuhisa, Satoru Ikehara and Jin'ichi Murakami*

Human Support Network System Using Friendly Robot  
*Masako Miyaji, Koji Kanagawa, Eri Sato and Toru Yamaguchi*

A Decision Support System for a Dove's Voice Competition  
*Chotirat Ratanamahatana*

### **IS33 Sharing of Learning Knowledge in an Information Age**

**Wednesday, 14.40 – 16.00, Room: Tregonwell Hall – BR2**

Chairs: Toyohide Watanabe and Tomoko Kojiri

Educational Evaluation of Intelligent and Creative Ability with Computer Games: A Case Study for eLearning  
*Yukuo Isomoto*

Development of a Planisphere Type Astronomy Education Web System Based on a Constellation Database Using Ajax  
*Katsuhiro Mouri, Mamoru Endo, Kumiko Iwazaki, Manabu Noda, Takami Yasuda and Shigeki Yokoi*

Annotation Interpretation of Collaborative Learning History for Self-Learning  
*Masahide Kakehi, Tomoko Kojiri and Toyohide Watanabe*

Self-Learning System Using Lecture Information and Biological Data  
*Yurie Iribe, Kouichi Katsurada, Kyoichi Matsuura, Tsuneo Nitta and Shuji Shinohara*

### **IS63 Recommender Agents and Adaptive web-based Systems**

**Wednesday, 14.40 – 16.00, Room: Durley Suite**

Chairs: Janusz Sobiecki, Przemysław Kazienko and Dariusz Król

Integrated Agent-Based Approach for Ontology-Driven Web Filtering  
*David Sanchez-Ruenes, David Isern and Antonio Moreno*

A Constrained Spreading Activation Approach to Collaborative Filtering  
*Josephine Griffith, Colm O'Riordan and Humphrey Sorensen*

Fuzzy Model for the Assessment of Operators' Work in a Cadastre Information System  
*Dariusz Krol, Grzegorz Kukla, Tadeusz Lasota and Bogdan Trawinski*

Local Buffer as Source of Web Mining Data  
*Andrzej Sieminski*

### **IS61 Soft Computing Techniques and Their Applications**

**Wednesday, 14.40 – 16.00, Room: Meyrick Suite 1**

Chair: Tanaka-yamawaki and Haruhiko Nishimura

Use of Support Vector Machines: Synergism to Intelligent Humanoid Robot walking Down a Slope

*Dongwon Kim and Gwi-Tae Park*

Evolutionary Elementary Cooperative Strategy for Global Optimization

*Crina Grosan, Ajith Abraham, Monica Chis and Tae-Gyu Chang*

Human Hand Detection using Evolutionary Computation for Gestures Recognition of A Partner Robot

*Setsuo Hashimoto, Fumio Kojima and Naoyuki Kubota*

A Simple 3D Edge Template for Pose Invariant Face Detection

*Stephen Karungaru, Norio Akamatsu, Takuya Akashi and Minoru Fukumi*

Emergence of Flocking Behavior Based on Reinforcement Learning

*Koichiro Morihiro, Teijiro Ispkawa, Nobuyuki Matsui and Haruhiko Nishimura*

### **IS59 Engineered Applications of Semantic Web – SWEA**

**Wednesday, 14.40 – 16.00, Room: Meyrick Suite 2**

Chairs: Giovanni Semeraro, Eugenio Di Sciascio and Tommaso Di Noia

A Semantic Web Portal for Semantic Annotation and Search

*Norberto Fernandez-Garcia, Jesus Arias Fisteus, Jose Blazquez-del-Toro and Luis Sanchez-Fernandez*

A Semantic Portal for Fund Finding in the EU: Semantic Upgrade, Integration and Publication of Heterogeneous Legacy Data

*Jesús Barrasa Rodríguez, Oscar Corcho and Asunción Gómez-Pérez*

A Heuristic Approach to Semantic Web Services Classification

*Miguel Angel Corella and Pablo Castells*

A RDF-based Framework for User Profile Creation and Management

*Marco Degemmis, Luigi Iannone, Oriana Licchelli, Ignazio Palmisano, Domenico Redavid, Giovanni Semeraro and Pasquale Hops*

### **IS39 Intelligent Databases in the Virtual Information Community**

**Wednesday, 14.40 – 16.00, Room: Westbourne Suite**

Chairs: Toyohide Watanabe and Jun Feng

The Reasoning and Analysis of Spatial Direction Relation Based on Voronoi Diagram

*Yongqing Yang, Jun Feng and Zhijian Wang*

Spatial Relation for Geometrical / Topological Map Retrieval

*Toru Shimizu, Masakazu Ikezaki, Taketoshi Ushima and Toyohide Watanabe*

NCO-Tree: A Spatio-Temporal Access Method for Segment-Based Tracking of Moving Objects

*Xiang Ren, Jun Feng and Yuelong Zhu*

Some Experiments of Face Annotation Based on Latent Semantic Indexing in FIARS

*Hideaki Ito and Hiroyasu Koshimizu*

### **IS23 Intelligent Data Processing in Process Systems and Plants**

**Wednesday, 14.40 – 16.00, Room: Branksome Suite 1**

Chairs: Yoshiyuji Yamashita and Tetsuo Fuchino

Adaptive Nonlinearity Compensation of Heterodyne Laser Interferometer

*Kwanho You, Minsuk Hong, Jaewook Jeon and Kiheon Park*

Study on Safety Operation Support System by Using the Risk Management Information  
*Yukiyasu Shimada, Atsushi Aoyama, Tetsuo Fuchino, Takashi Hamaguchi, Teiji Kitajima and Kazuhiro Takeda*

Analysis of ANFIS Model for Polymerization Process  
*Hideyuki Matsumoto, Chiaki Kuroda and. Cheng Lin*

On-line Extraction of Qualitative Movements for Monitoring Process Plants  
*Yoshiyuki Yamashita*

### **IS50 Connectionist Models and Their Applications**

**Wednesday, 14.40 – 16.00, Room: Branksome Suite 2**

Chairs: Emilio Corchado and Hujun Yin

Fast Shape Index Framework Based on Principle Component Analysis Using Edge Co-occurrence Matrix

*Zhiping Xu, Shiyong Zhang and Yiping Zhong*

Stock Index Modeling Using Hierarchical RBF Networks

*Yuehui Chen, Yuehui Abraham and Lizhi Peng*

Mathematical Formulation of a Type of Hierarchical Neurofuzzy System

*Omar Sánchez, Francisco Moreno, Sixto Romero and M.A. Vélez*

Hardware Support for Language Aware Information Mining

*Michael Freeman and Thimal Jayasooriya*

Measuring GNG Topology Preservation in Computer Vision Applications

*José García, Francisco Flórez and Juan Manuel García*

Outlier Resistant PCA Ensembles

*Emilio Corchado, Bruno Baruque and Bogdan Gabrys*

### **TEA AND COFFEE BREAK / POSTER PRESENTATIONS – (Information same as morning break)**

**Wednesday, 16.00 – 16.30, Room: Purbeck Lounge**

### **PAPER PRESENTATION SESSIONS**

#### **IS43 Context Aware Evolvable and Adaptable Systems and Their Applications**

**Wednesday, 16.30 – 17.30, Room: Tregonwell Hall – Main**

Chairs: Phill Kyu Rhee and Rezaul Bashar

Implementation of a FIR Filter on a Partial Reconfigurable Platform

*Hanho Lee and Chong-Seok Choi*

A Context Model for Ubiquitous Computing Applications

*Rezaul Bashar, Mi Young Nam and Phill Kyu Rhee*

Modelling for Robust Vision Systems

*Song Guo Jin, Rezaul Bashar, Eun Sung Jung, Mi Young Nam and Phill Kyu Rhee*

#### **IS38 Knowledge-based Interface Systems (2)**

**Wednesday, 16.30 – 17.30, Room: Tregonwell Hall – BR1**

Chairs: Yoshinori Adachi and Nobuhiro Inuzuka

Relational Association Mining Based on Structural Analysis of Saturation Clauses  
*Nubutiro Inuzuka, Jun-ichi Motoyama and Tomofumi Nakano*

Examination of Effects of Character Size on Accuracy of Writer Recognition by New Local Arc Method  
*Masahiro Ozaki, Yoshinori Adachi and Naohiro Ishii*

Study of Features of Problem Group and Prediction of Understanding Level  
*Yoshinori Adachi, Yuji Iwahori and Masahiro Ozaki*

### **IS55 Innovations in Intelligent Agents and Applications**

**Wednesday, 16.30 – 17.30, Room: Tregonwell Hall – BR2**

Chair: Lakhmi Jain

Testing Online Navigation Recommendations in a Web Site  
*Juan Velasquez and Vasile Palade*

Innovations in Intelligent Agents and Web  
*Gloria Phillips-Wren and Lakhimi Jain*

### **IS63 Recommender Agents and Adaptive web-based Systems**

**Wednesday, 16.30 – 17.30, Room: Durley Suite**

Chairs: Janusz Sobecki, Przemysław Kazienko and Dariusz Król

Lessons from the Application of Domain-Independent Data Mining System for Discovering Web User Access Patterns  
*Leszek Borzemski and Adam Druszcz*

Application of Hybrid Recommendation in Web-Based Cooking Assistant  
*Janusz Sobecki, Emilia Babiak and Marta Slanina*

Using Representation Choice Methods for a Medical Diagnosis Problem  
*Ngoc Thanh Nguyen, Kamila Aftarczuk and Adrianna Koziarkiewicz*

### **IS56 Intelligent Pattern Recognition and Classification in Astrophysical and Medical Images**

**Wednesday, 16.30 – 17.30, Room: Meyrick Suite 1**

Chairs: Valentina Zharkova and Jie Zhang

Robust Segmentation for Left Ventricle Based on Curve Evolution  
*Gang Yu, Yuxiang Yang, Peng Li and Zhangzhong Bian*

Segmentation of Ovarian Ultrasound Images using Cellular Neural Networks Trained with Support Vector Machines  
*Boris Cigale, Mitja Leni and Damjan Zazula*

Bayesian Decision Tree Averaging for the Probabilistic Interpretation of Solar Flare Occurrences  
*Vitaly Schetinin, Sergey Zharkov and Valentina Zharkova*

### **IS59 Engineered Applications of Semantic Web – SWEA**

**Wednesday, 16.30 – 17.30, Room: Meyrick Suite 2**

Chairs: Giovanni Semeraro, Eugenio Di Sciascio and Tommaso Di Noia

Integrated Document Browsing and Data Acquisition for Building Large Ontologies  
*Felix Weigel, Levin Brunner, Klaus Schulz and Eduardo Torres-Schumann*

A Workflow Modelling Framework Enhanced with Problem-Solving Knowledge

*Juan Carlos Vidal, Manuel Lama and Alberto Bugarin*

M-OntoMat-Annotizer: Image Annotation Linking Ontologies and Multimedia Low-Level Features *Yiannis Kompatsiaris, Dionysios Anastasopoulos, Kosmas Petridis, Carsten Saathoff, Steffen Staab and Norman Timmermann*

### **IS39 Intelligent Databases in the Virtual Information Community**

**Wednesday, 16.30 – 17.30, Room: Westbourne Suite**

Chairs: Toyohide Watanabe and Jun Feng

Extended Virtual Type for a Multiple-type Object with Repeating Types  
*Hideki Sato and Masayoshi Aritsugi*

Geographical Information Structure for Managing a Set of Objects as an Event  
*Masakazu Ikezaki, Taketoshi Ushima and Toyohide Watanabe*

Graph-Based Data Model for the Content Representation of Multimedia Data  
*Teruhisa Hochin*

### **IS23 Intelligent Data Processing in Process Systems and Plants**

**Wednesday, 16.30 – 17.30, Room: Branksome Suite 1**

Chairs: Yoshiyuki Yamashita and Tetsuo Fuchino

Semi-Qualitative Encoding of Manifestations at Faults in Conductive Flow Systems  
*Viorel Ariton*

Design Problems of Decision Making Support System for Operation in Abnormal State of Chemical Plant  
*Kazuhiro Takeda, Takashi Hamaguchi, Hisayoshi Matsuyama, Yukiyasu Shimada and Yoshifumi Tsuge*

Training System for Maintenance Personnel based on Analogical Reasoning  
*Takashi Hamaguchi, Yoshihiro Hashimoto, Meng Hu, Toshiaki Itoh, Yukiyasu Shimada and Kazuhiro Takeda*

### **IS64 Intelligent Data Analysis for Complex Environments**

**Wednesday, 16.30 – 17.30, Room: Branksome Suite 2**

Chair: Kenneth J Mackin

Construction of School Temperature Measurement System with Sensor Network  
*Ayahiko Niimi, Kei Ito, Osamu Konishi and Masaaki Wada*

Land Cover Classification from MODIS Satellite Data Using Probabilistically Optimal Ensemble of Artificial Neural Networks  
*Kenneth Mackin, Eiji Nunohiro, Masanori Ohshiro and Kazuko Yamasaki*

### **KES 2007**

**17.30 – 18.30, Tregonwell Hall**

05/10/06