

# **KES2007**

## 11th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems

in conjunction with

# **WIRN2007**

## XVII Italian Workshop on Neural Networks

Lloyd's Baia Hotel, Vietri sul Mare, Salerno, Italy  
(12, 13 and 14 September 2007)

### **Conference program**

#### Sponsoring Institutions



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### KES-WIRN 2007 General Program

	Sep 11th	Sep 12th	Sep 13th	Sep 14th	
8:00		Registration			8:00
9:00		Opening			9:00
10:00		Keynote lecture			10:00
11:00		Coffee break			11:00
12:00		Oral sessions			12:00
13:00		Lunch			13:00
14:00		Keynote lecture			14:00
15:00		Coffee break			15:00
16:00		Oral sessions		Snapshot sessions	16:00
17:10				Poster	17:00
18:10	Registration	Snapshot sessions			18:00
19:10		Poster	Poster	KES board	19:00
20:00	Registration drink	Welcome drink Concert		SIREN board	20:00
21:00		Social dinner			21:00
	Sep 11th	Sep 12th	Sep 13th	Sep 14th	

## September 12

	Room F	Room A	Room E1	Room E2	Room B+C	Room D
10:30						
10:50						
11:10	GT12	IE02	GT11	IK01	IP08a	IS01
11:30						
11:50						
12:10						
12:30	GT08a	IE01	IP09	IP02		
12:50						
13:10						
15:30						
15:50						
16:10	GT08b	IE16	IE15	IE19	IP08b	IS12
16:30						
16:50						
17:10			GT08, GT11, GT12, GT13	IE01, IE02, IE15, IE16, IE19, IP02, IP08		IK01, IK09, IS01, IS03
18:10	Poster sessions					
19:10						

### September 13

	Room F	Room A	Room E1	Room E2	Room B+C	Room D
10:30						
10:50						
11:10	GT06	IE03	IE09	IK03	IP03	IS13
11:30						
11:50						
12:10						
12:30	GT09a	IE14	IE08	IK04		IS05
12:50						
13:10						
15:30						
15:50						
16:10	GT09b	IE18	GT05	IK05	IP04	IS04
16:30						
16:50						
17:10	GT04, GT05, GT06, GT09		IE03, IE05, IE08, IE13, IP04	IK03, IK04, IK05, IK10, IS04, IS05, IS06		IE04
18:10	Poster sessions					
19:10						

**September 14**

	Room F	Room A	Room E1	Room E2	Room B+C	Room D		
10:30	GT14	IE06	IE12	IK08	IP05	IS07		
10:50								
11:10								
11:30								
11:50								
12:10							IP06	
12:30								
12:50							IE07a	IK07
13:10								
15:30							GT01, GT02, GT14	
15:50								
16:10								
16:30								
16:50	Poster session							
17:10	Poster session							
17:30	GT01	IE07b	IE11	IK06	IP01	IS02		
17:50								
18:10								
18:30								
18:50								
19:10								

# Keynote lectures

## September 12

### 9:00, Room F

Walter J. Freeman, University of California, Berkeley, USA: *Thermodynamic Model of Knowledge Retrieval in Brain Dynamics for Information Processing*

### 14:00, Room F

Hans-Andrea Loeliger, ETH, Zurich, Switzerland: *The factor graph approach to model-based signal processing*

## September 13

### 9:00, Room F

Mario Lauria, Telethon Institute of Genetics and Medicine, Napoli, Italy: *Biologically inspired computing and self-organizing computation*

### 14:00, Room F

Yoshiteru Ishida, Toyohashi University of Technology, Japan: *The immune system offered a glimpse: what makes biological systems distinct from artificial ones*

## September 14

### 9:00, Room F

Jean-François Cardoso, École Nationale Supérieure des Télécommunications, France: *Independent component analysis: Concepts and applications*

**14:00, Room F**

Mario Gerla, University of California, Los Angeles, USA: *Probing and mining the urban environment using the vehicular sensor network*

# Oral presentations



## September 12

### Session GT12: Web Intelligence, Text and Multimedia Mining and Retrieval (10:30, room F)

**Chair: Andreas Nuernberger**

A Bootstrapping Approach for Chinese Main Verb Identification  
*Chunxia Zhang, Cungen Caok Zhendong Niu*

A Novel Method of Extracting and Rendering News Web Sites on Mobile Devices  
*Harshit Kumar, Sungjoon Park, Sanggil Kang*

An Adaptation Framework for QBH-based Music Retrieval  
*Seungmin Rho, Byeong-jun Han, Eenjun Hwang, Minkoo Kim*

Fair News Reader: Recommending News Articles with Different Sentiments based on User Preference  
*Yukiko Kawai, Tadahiko Kumamoto, Katsumi Tanaka*

### Session GT08: Miscellaneous Intelligent Algorithms (11:50, room F)

**Chair: Honghai Liu**

A Method of Selecting and Transcoding Content for Mobile Web Service  
*Euisun Kang, Daehyuck Park, Younghwan Lim*

An Approach to Modeling Context-Adaptable Services  
*Yukyong Kim, Kyung-Goo Doh*

Extended Fuzzy C-Means Clustering in GIS Environment for Hot Spot Events  
*Ferdinando Di Martino, Vincenzo Loia, Salvatore Sessa*

Framework of an Immunity-Based Anomaly Detection System for User Behavior  
*Takeshi Okamoto, Yoshiteru Ishida*

Harmony Search Algorithm for Solving Sudoku  
*Zong Woo Geem*

Mutation Probability Threshold of HIV for AIDS  
*Kouji Harada, Yoshiteru Ishida*

Performance Analysis of WAP in Bluetooth Ad-hoc Network System  
*Il-Young Moon*

Prediction of E.Coli Promoter Gene Sequences Using a Hybrid Combination Based on Feature Selection, Fuzzy Weighted Pre-processing, and Decision Tree Classifier  
*Bayran Akdemir, Kemal Polat Salih Güneş*

Time Discretisation Applied to Anomaly Detection in a Marine Engine  
*Ian Morgan, Honghai Liu, George Turnbull, David Brown*

## **Session IE02: Artificial Intelligence Applications in Digital Content (10:30, room A)**

**Chair: Mu-Yen Chen, Hsiao-Ya Chiu**

A Personalization Recommendation Framework of IT Certification e-learning system

*Heng-Li Yang, Chen-Shu Wang, Mu-Yen Chen*

Breedbot: an Edutainment Robotics System to Link Digital and Real World

*Orazio Miglino, Onofrio Gigliotta, Michela Ponticorvo, Stefano Nolfi*

Modeling E-learning System Performance Evaluation with Agent-based Approach

*Hsiao-Ya Chiu, Chieh Chung Sheng, An-Pin Chen*

A Hybrid System: Neural Network with Data Mining in an e-Learning Environment

*David Wen-Shung Tai, Hui-Ju Wu, Pi-Hsiang Li*

## **Session IE01: Ambient Intelligence (11:50, room A)**

**Chair: Cecilio Angulo-Bahon, Hongai Liu**

An Efficient Indexing Technique for Location Prediction of Moving Objects

*Dong-Oh Kim, Kang-Jun Lee, Dong-Suk Hong, Ki-Joon Han*

Combining Smart Tags and Body Fixed Sensors for Disabled People Assistance

*Juan Antonio Álvarez, Carlos Pérez, Cecilio Angulo, Juan Antonio Ortega*

Modeling Smart Homes for Prediction Algorithms

*Alejandro Fernández-Montes, Dr. J. Antonio Álvarez, Juan Antonio Ortega, M. D. Cruz, L. Gonzáles, F. Velasco*

Qualitative Correspondence for Object Tracking using Dynamic Panorama

*Farshad Fahimi, Honghai Liu, David J. Brown*

## **Session IE16: Intelligent Mechanism for Knowledge Innovation (15:30, room A)**

**Chair: Toyohide Watanabe, Teketoshi Ushiyama**

An Implementation Design of a Fine-Grained Database Access Control Policy Consistency Checking Mechanism

*Bat-Odon Purevjii, Masayoshi Aritsugi, Sayaka Imai, Yoshinari Kanamori*

Applying Privacy Preserving Count Aggregate Queries to k-Classification

*Hidehisa Takamizawa, Masayoshi Aritsugi*

Synchronizing Music and Video of Query Results in Cross-Media Retrieval System

*Teruhisa Hochin, Wen Xue*

Message Flow: Design and Architecture of a Message Flow Management System

*Hideaki ITO, Teruo FUKUMURA*

Event-centralized Management of Geographic Information Collected from Blog

*Shoko Yasumura, Masakazu Ikezaki, Toyohide Watanabe, Taketoshi Ushiyama*

## **Session GT11: Knowledge Management and Ontologies (10:30, room E1)**

**Chair: Guy Gouarderes, Gloria Wren, Lakhmi Jain**

Corpus Building for Corporate Knowledge Discovery and Management: A Case Study of Manufacturing

*Ying Liu, Han Tong Loh*

Intelligent Decision Support System for Evaluation of Ship Designers

*Sylvia Encheva, Maryna Solesvik, Sharil Tumin*

Recent advances in intelligent decision technologies

*Gloria Phillips-Wren, Lakhmi Jain*

Fitting opportunistic networks data with a Pareto distribution

*Bruno Apolloni, Simone Bassis, Sabrina Gaito*

## **Session IP09: Soft computing in electromagnetic applications (11:50, room E1)**

**Chair: Raffaele Martone**

Information Theoretic Learning for Inverse Problem Resolution in Bio-Electromagnetism

*Nadia Mammone, Maurizio Fiasché, Giuseppina Inuso, Fabio La Foresta, Francesco Carlo Morabito, Mario Versaci*

Modeling of Passive Electronic Circuits with Sensibility Analysis Dedicated to the Sizing by Optimization

*Denis Duret, Laurent Gerbaud, Frederic Wurtz, Jean-Pierre Keradec, Bruno Cogitore*

Non invasive faults monitoring of electrical machines by solving steady state magnetic inverse problem

*Viet Phuong Bui, Olivier Chadebec, Laure-Line Rouve and Jean-Louis Coulomb*

Soft Computing Approaches for the Resolution of Electromagnetic Inverse Problems

*Marco Cioffi, Vincenzo Cutrupi, Fabrizio Ferraioli, Alessandro Formisano, Raffaele Martone*

## **Session IE15: Intelligent Data Processing in Process Systems and Plants (15:30, room E1)**

**Chair: Tetsuo Fuchino, Yoshiyuki Yamashita**

A knowledge-Based Approach for the Analysis of Abnormal Situations

*Tetsuo Fuchino, Rafael Batres, Yukiyasu Shimada*

Integration of Multi-agent Controller and Scheduler for Multi-purpose and Multi-batch Plant

*Takashi Hamaguchi, Hossam Gabbar, Yoshihiro Hashimoto, Teiji Kitazima, Yukiyasu Shimada, Kazuhiro Takeda*

Optimization Method for Design of Supercritical Water Oxidation Process Using Genetic Algorithm

*Hiroya Yamasaki, Kazuhiro Takeda, Yukiyasu Shimada, Takashi Hamaguchi, Teiji Kitajima, Tetsuo Fuchino*

Transient Air-fuel Ratio Estimation in Spark Ignition Engine Using Recurrent Neural Networks

*Yanhong Zhang, Lifeng Xi, James Liu*

## **Session IK01: Chance Discovery (10:30, room E2)**

**Chair: Akinori Abe, Yukio Ohsawa**

An interface for medical diagnosis support

*Akinori Abe, Yoshiyuki Furutani, Michiko Furutani, Norihiro Hagita, Rumiko Matsuoka*

Discovering Color Semantics as a Chance for Developing Cross-Cultural Design Frameworks

*Gyoung Soon Choi, David Cottingham, Hilary Dalke, Ruediger Oehlmann*

Evaluating a Constructive Meta-Learning Algorithm for a Rule Evaluation Support Method Based on Objective Indices

*Hidenao Abe, Miho Ohsaki, Shusaku Tsumoto, Takahira Yamaguchi*

Information Literacy and Everyday Life Risks

*Yumiko Nara*

Logic of Discovery in Uncertain Situations. Deciding Algorithms

*Vladimir Rybakov*

## **Session IP02: Computational methods for intelligent neuro-fuzzy applications (12:10, room E2)**

**Chair: Gwi-Tai Park, Dongwon Kim**

Fuzzy Adaptive Particle Filter for Localization of A Mobile Robot

*Young-Joong Kim, Chan-Hee Won, Jung-Min Pak, Myo-Taeg Lim*

Fuzzy Combined Polynomial Neural Networks

*Seok-Beom Roh, Tae-Chon Ahn*

Human Machine Interface with Augmented Reality for the Network Based Mobile Robot

*Ho-Dong Lee, Hyun-Gu Lee, Joo-Hyung Kim, Min-Chul Park, Gwi-Tae Park*

### **Session IE19: Logic based intelligent information systems (15:30, room E2)**

**Chair: Kazumi Nakamatsu**

A Logic Grammar for Circuit Analysis - Problems of Recursive Definition

*Takushi Tanaka*

A Natural Deduction System for Annotated Predicate Logic

*Seiki Akama, Kazumi Nakamatsu, Jair Abe*

An Intelligent Coordinated Traffic Signal Control Based on EVALPSN

*Kazumi Nakamatsu, Jair Abe, Seiki Akama*

Knowledge Assessment Based on Many-Valued Logic

*Sylvia Encheva, Sharil Tumin*

Monadic Curry Algebras Qt

*Jair Abe, Seiki Akama, Kazumi Nakamatsu*

### **Session IP08: Soft computing approach to management engineering (10:30, room B+C)**

**Chair: Junzo Watada, Huey-Ming Lee, Taki Kanda**

A Bio-Soft Computing Approach to Re-arrange a Flexible Manufacturing Robot

*Rohani Binti Abu Bakar, Junzo Watada*

A Fuzzy Measure Identification Method by Diamond Pairwise Comparisons: AHP Scales and Grabishs Graphical Interpretation

*Eiichiro Takahagi*

A Self-Adaptive Evolutionary Negative Selection Approach for Home Anomaly Events Detection

*Huey-Ming Lee, Ching-Hao Mao*

An alternative Measure: Chinese Urbanization

*Bing Xu, Junzo Watada*

Certificate and Authority Application Based on Grid Environment

*Huey-Ming Lee, Tsang-Yean Lee, Heng-Sheng Chen*

Comparison of Consumer Behaviors in Taiwan Non-Store Channels

*Lily Lin, Huey-Ming Lee, Li-Hsueh Lin*

DNA Computing Approach to Management Engineering  
*Don Jyh-Fu Jeng, Rohani Abu Bakar, Junzo Watada*

Dynamic Tracking System for Object Recognition  
*Zalili Binti Musa, Junzo Watada*

Fuzzy Group Assessment for Facility Location Decision  
*Lily Lin, Huey-Ming Lee*

Judgment on Consistency of Human Feelings in Paired Comparison  
*Taki Kanda*

Relationship between Alarm of Collision Alarm System and Driver's Operation of Brakes  
*Hiroaki Kosaka, Hirokazu Nishitani*

Study of a Numerical Simulation for Computing to Accurate Cutting with High-Velocity Waterjet  
*Sheau-Wen Shiah, Tzeng-Yuan Heh, Fu-Cheng Yang, Chan-Yung Jen, Po-Hung Lin*

## **Session IS01: Advanced Cooperative Work (10:30, room D)**

**Chair: Juan Munemori, Takashi Yoshino, Takaya Yuizono**

Development and Evaluation of A Ubiquitous Historical Tour Support System  
*Satoru Fujii, Yusuke Takahashi, Hisayoshi Kageyama, Hirokazu Aoyama, Tadanori Mizuno*

Distance Learning System for Programming and Software Engineering  
*Kouji Yoshida, Isao Miyaji, Kunihiro Yamada, Hiroshi Ichimura*

Evaluation of Metadata-Based Data Aggregation Scheme in Clustering Wireless Sensor Networks  
*Yoshitsugu Obashi, Tomohiro Kokogawa, Yi Zheng, Huifang Chen, Hiroshi Mineno, Tadanori Mizuno*

Impression Evaluation of Presentation Contents Using Embodied Characters' Dialogue with Atmosphere  
*Junko Ito, Jun Munemori*

Learning Communities for Information Systems Design Class with Process Model Approach  
*Mikinori Kokubo, Masaaki Nakamura, Teruhisa Ichikawa*

Markov model based mobile clickstream analysis with sub-day, day and week-scale transitions  
*Toshihiko Yamakami*

New Methodology for Information Resource Management by 4 Aspects Parallel Approach

*Kazuya Shizuoka Matsudaira*

Reliable Communication Methods for Mutual Complementary Home-Network  
*Takashi Kaneyama, Kunihiro Yamada, Takashi Furumura, Hiroshi Mineno, Tadanori Mizuno*

## **Session IS12: Skill Acquisition and Ubiquitous Human Computer Interaction (15:30, room D)**

**Chair: Hirokazu Taki, Satoshi Hori**

A fast reading spatial knowledge system by ultrasonic sound beams

*Taizo Miyachi, Jens J. Balvig, Jiang Shen Bo, Ipei Kuroda*

A Quiet Navigation for Safe Crosswalk by Ultrasonic Beams

*Taizo Miyachi, Jens J. Balvig, Wataru Kisada, Kazuki Hayakawa, Takeshi Suzuki*

A study of meaning comprehensibility of pictograms for lathe procedural instructions

*Atsuko Yamazaki, Joji Yabutani, Yoko Ebisawa, Satoshi Hori*

Indoor Localization for Mobile Node based on RSSI

*Hirokazu Miura, Kazuhiko Hirano, Noriyuki Matsuda, Hirokazu Taki, Norihiro Abe, Satoshi Hori*

Sketch Learning Environment based on Drawing Skill Analysis

*Masato Soga, Noriyuki Matsuda, Saeko Takagi, Hirokazu Taki, Fujiichi Yoshimoto*

## **September 13**

### **Session GT06: Knowledge Based and Expert Systems (10:30, room F)**

**Chair: Anne Håkansson**

Automated Testing for Knowledge Based Systems

*Ronald Hartung, Anne Håkansson*

Building Maintainable Knowledge Bases with Knowledge Objects

*John Debenham*

Influenza Forecast: Case-Based Reasoning or Statistics?

*Rainer Schmidt, Tina Waligora*

Modelling a Team of Radiologists for Lung Nodule Detection in CT Scans  
*Michela Antonelli, Marco Cococcioni, Graziano Frosini, Beatrice Lazzerini, Francesco Marcelloni*

**Session GT09: Intelligent Vision and Image Processing  
(11:50, room F)**

**Chair: Tuan Pham**

3D  $\alpha$ -expansion and Graph Cut Algorithms for Automatic Liver Segmentation from CT Images

*Elena Casiraghi, Gabriele Lombardi, Stella Pratissoli, Simone Rizzi*

Analysis and Recognition of Touching Cell Images Based on Morphological Structures

*Donggang Yu, Dr. Tuan D. Pham, Xiaobo Zhou*

Comparison of Accumulative Computation with Traditional Optical Flow

*Antonio Fernández-Caballero, Rafael Pérez-Jiménez, Miguel A. Fernández, María T. López*

Face Recognition Based on 2D and 3D Features

*Stefano Arca, Raffaella Lanzarotti, Giuseppe Lipori*

Generalization of a Recognition Algorithm Based on Karhunen-Loève Transform

*Francesco Gianfelici, Claudio Turchetti, Paolo Crippa, Viviana Battistelli*

JPEG2000 Low Complexity Allocation Method of Quality Layers

*Francesc Aulí-Llinàs, Joan Serra-Sagristà, Carles Rúbies-Feijoo, Lluís Donoso-Bach*

Motion Estimation Algorithm in Video Coding

*Vibha Bafna, Milind M. Mushrif*

Reference Independent Moving Object Detection: An Edge Segment Based Approach

*M. Ali Akber Dewan, Julius M. Hossain, Oksam Chae*

Search for a Computationally Efficient Image Super-Resolution Algorithm

*Vivek Bannore, Leszek Swierkowski*

**Session IE03: Artificial Intelligence Applications in Security (10:30, room A)**

**Chair: Emilio Corchado, Rodolfo Zunino**

A Dedicated Hardware for Fingerprint Authentication

*Giovanni Danese, Mauro Giachero, Francesco Leporati, Giulia Matrone, Nelson Nazzicari*



Belnap's Logic in Sharing Protected Web Resources  
*Sylvia Encheva, Sharil Tumin*

IDS Based on Bio-Inspired Models  
*Paolo Gastaldo, Francesco Picasso, Rodolfo Zunino, Álvaro Herrero, Emilio Corchado, José Sáiz*

Security Policies Tuning Among IP Devices  
*Simone Ferraresi, Emanuele Francocci, Alessio Quaglini, Francesco Picasso*

## **Session IE14: Intelligent Control Theory and Applications (11:50, room A)**

**Chair: Kazumi Nakamatsu, Scheng-Luen Chung**

A Gait Based Approach to Detect Directional Bias of Four-Legged Robots' Direct Walking Utilizing Acceleration Sensors  
*Ding-Jie Huang, Wei-Chung Teng*

An Intelligent Algorithm for Scheduling Jobs on a Single Machine with a Common Due Date  
*Zne-Jung Lee, Chen-Chia Chuang, Kuo-Ching Ying*

Application of Intelligent Neural Networks to Prediction of Micro-Electroforming for U-Type Micro-Cavity  
*Sheau-Wen Shiah, Pai-Yu Chang, Tzeng-Yuan Heh, Po-Hung Lin, Fu-Cheng Yang*

Design of a Supervisor for Traffic Light Systems  
*Ta-Hsiang Chung, Yi-Sheng Huang*

## **Session IE18: Intelligent Techniques for biometric based authentication (15:30, room A)**

**Chair: Ernesto Damiani, Antonia Azzini, Stefania Marrara**

A Fuzzy Approach to Multimodal Biometric Authentication  
*Antonia Azzini, Stefania Marrara, Roberto Sassi, Fabio Scotti*

An Open Source Java Framework for Biometric Web Authentication based on BioAPI  
*Elisardo Gonzalez Agulla, Jose Luis Alba Castro, Carmen Garcia Mateo, Enrique Otero Muras*

Feature Distribution of the Fingerprint Template Generated by the Geometric Hashing-based Fuzzy Vault  
*Sungju Lee, Yonguha Chung, Daesung Moon*

Hand Geometry Verification Using Time Series Representation  
*Vit Niennattrakul, Chotirat Ann Ratanamahatana, Dachawut Wanichsan*

Navigation dynamics as a biometrics for authentication  
*Ernesto Damiani, Gabriele Gianini*

**Session IE09: Innovations in Intelligent Data Analysis (10:30, room E1)**

**Chair: Mika Sato, Lakhmi Jain**

A Likelihood Ratio Test for Differential Metabolic Profiles in Multiple Intensity Measurements

*Frank Klawonn, Claudia Choi, Beatrice Benkert, Bernhard Thielen, Richard Mønch, Max Schobert, Dietmar Schomburg, Dieter Jahn*

Combining Bagging, Boosting and Dagging for Classification Problems

*Sotiris Kotsiantis, D. Kanellopoulos*

Functional Clustering and Functional Principal Points

*Nobuo Shimizu, Masahiro Mizuta*

Prescreening of Candidate Rules using Association Rule Mining and Pareto-Optimality in Genetic Rule Selection

*Hisao Ishibuchi, Isao Kuwajima, Yusuke Nojima*

Term Clustering in Texts Based on Fuzzy Neighborhoods and Kernel Functions

*Sadaaki Miyamoto, Satoshi Hayakawa, Yuichi Kawasaki*

Variable Based Fuzzy Blocking Regression Model

*Mika Sato-Ilic*

**Session IE08: Hybrid Artificial Intelligence Systems Workshop (HAIS07-KES2007) (12:10, room E1)**

**Chair: Juan M. Corchado, Emilio Corchado**

Automated Ham Quality Classification Using Ensemble Unsupervised Mapping Models

*Bruno Baruque, Emilio Corchado, Hujun Yin, Jordi Rovira, Javier González*

Hybrid Architecture for a Reasoning Planner Agent

*Javier Bajo, Dante I. Tapia, Ana de Luis, Sara Rodríguez, Juan F. de Paz, Juan M. Corchado*

Using a Neurofuzzy Approach in a Medical Application

*Constantinos Koutsojannis, Ioannis Hatzilygeroudis*

## **Session GT05: Agent Systems (15:30, room E1)**

**Chair: Ngoc Thanh Nguyen**

A Belief-Desire Framework for Goal Revision

*Célia da Costa Pereira, Andrea G. B. Tettamanzi*

Calculating optimal decision using Meta-level agents for Multi-Agents in Networks

*Anne Håkansson, Ronald Hartung*

Field-based Coordination of Mobile Intelligent Agents: An Evolutionary Game Theoretic Analysis

*Krunoslav Trzec, Ignac Lovrek*

Hybrid Filtering Methods Applied in Web-based Movie Recommendation System

*Ngoc Thanh Nguyen, Maciej Rakowski, Michal Rusin, Janusz Sobecki, Lakhmi C. Jain*

The Statistical Verification of Rough Classification Algorithms

*Adrianna Kozierekiewicz, Ngoc Thanh Nguyen*

## **Session IK03: Knowledge - Based Interface Systems (I) (10:30, room E2)**

**Chair: Naohiro Ishii, Yuji Iwahori**

A unified approach to Web usage mining based on frequent sequence mining

*Nobuhiro Inuzuka, Jun-ichi Hayakawa*

Estimation of Initial Contour Based on Edge Background Subtraction for Self-affine Mapping System

*Haruki Kawanaka, Hirofumi Kato, Fuminori Matsubara, Yuji Iwahori, Robert J. Woodham*

Improvement of Accuracy for Gaussian Curvature Using Modification Neural Network

*Yuji Iwahori, Takashi Nakagawa, Shinji Fukui, Haruki Kawanaka, Robert J. Woodham, Yoshinori Adachi*

Shadow Removal Method for Real-Time Extraction of Moving Objects

*Shinji Fukui, Nozomi Yamamoto, Yuji Iwahori, Robert J. Woodham*

## **Session IK04: Knowledge - Based Interface Systems (II) (11:50, room E2)**

**Chair: Yoshinori Adachi, Nobuhiro Inuzuka**

Delayed Learning and the Organized States

*Toshinori Deguchi, Naohiro Ishii*

Educational System Using Self-monitor Study and Streaming

*Masahiro Ozaki, Yoshinori Adachi, Saori Takeoka, Ai Sugimura, Naohiro Ishii*

Influence of Presence of Frame on Writer Recognition

*Yoshinori Adachi, Masahiro Okazi, Yuji Iwahori, Naohiro Ishii*

Information Extraction by XLM

*Masashi Okada, Naohiro Ishii, Nariaki Kato*

## **Session IK05: Knowledge and Information Management in Social Community (15:30, room E2)**

**Chair: Toyohide Watanabe, Naoto Mukai, Jun Feng**

A Regional Safety Information Sharing System Based on CMS and Online Map System

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

Avoidance of Traffic Delay for Panicking Crowds Subject to Information Propagation

*Naoto Mukai, Toyohide Watanabe, Jun Feng*

Optimization of Vehicle Assignment for Car Sharing System

*Kentaro Uesugi, Naoto Mukai, Toyohide Watanabe*

Indexing of Moving Objects on Road Network Using Composite Structure

*Jun Feng, Jiamin Lu, Yuelong Zhu, Naoto Mukai, Toyohide Watanabe*

A Piecewise Linear Representation Method of Time Series Based on Feature Points

*Yuelong Zhu, De Wu, Shijin Li*

## **Session IP03: Learning Automata & Soft Computing Techniques and Their Applications (10:30, room B+C)**

**Chair: Norio Baba, Ann Nowe, Katja Verbeeck**

A Consideration on the Learning Performances of the Hierarchical Structure Learning Automata (HSLA) Operating in the General Nonstationary Multi-teacher Environment

*Norio Baba, Yoshio Mogami*

A Cooperative Grid Computing Approach to Automated Theorem Finding and Automated Problem Proposing

*Jingde Cheng, Yuichi Goto, Shinsuke Nara, and Takahiro Koh*

Fast Statistical Learning Algorithm for Feature Generation

*Minoru Fukumi, Stephen Karungaru, Satoru Tsuge, Miyoko Nakano, Takuya Akashi, Yasue Mitsukura*

Human Three-Dimensional Modeling based on Intelligent Sensor Fusion for A  
Tele-operated Mobile Robot

*Naoyuki Kubota, Masashi Satomi, Kazuhiko Taniguchi, Yasutsugu Nogawa*

Optimal Convergence in Multi-Agent MDPs

*Peter Vrancx, Katja Verbeeck, Ann Nowé*

Reinforcement Learning Scheme for Grouping and Anti-Predator Behavior

*Koichiro Morihiro, Haruhiko Nishimura, Tejiro Isokawa, Nobuyuki Matsui*

Three-dimensional Classification of Insect Neurons Using Self-Organizing Maps

*Hiroki Urata, Tejiro Isokawa, Yoich Seki, Naotake Kamiura, Nobuyuki Matsui,  
Hidetoshi Ikeno, Ryohei Kanzaki*

Using weak prior information on structures to learn Bayesian Networks

*Massimiliano Mascherini, Federico M. Stefanini*

## **Session IP04: Learning from uncertain data (15:30, room B+C)**

**Chair: Dario Malchiodi**

A Modified SVM Classification Algorithm for Data of Variable Quality

*Bruno Apolloni, Dario Malchiodi, Luca Natali*

Exploiting Uncertain Data in Support Vector Classification

*Jianqiang Yang, Steve Gunn*

Fuzzy-Input Fuzzy-Output One-Against-All Support Vector Machines

*Christian Thiel, Stefan Scherer, Friedhelm Schwenker*

Reliable learning: a theoretical framework

*Marco Muselli, Francesca Ruffino*

## **Session IS13: XML Security (10:30, room D)**

**Chair: Stefania Marrara, Ernesto Damiani, Marjirus Fansi, Alban  
Gabaillon**

A Rewrite based Approach for Enforcing Access Constraints for XML

*Sriram Mohan, Arijit Sengupta, Yuqing Wu*

On Flexible Modeling of History-Based Access Control Policies for XML Docu-  
ments

*Patrick Röder, Omid Tafreschi, Claudia Eckert*

Securely Updating XML

*Ernesto Damiani, Majirus Fansi, Alban Gabaillon, Stefania Marrara*

XML-BB: A model to handle relationships protection in XML documents

*Frédéric Cuppens, Nora Cuppens-Bouahia, Thierry Sans*

**Session IS05: Environment Support in Advanced Learning collaboration (11:50, room D)**

**Chair: Toyohide Watanabe, Tomoko Kojiri**

Practical Environment for Realizing Augmented Classroom with Wireless Digital Pens

*Motoki Miura, Susumu Kunifuji, Yasuyuki Sakamoto*

A Next-generation Audio-guide System for Museums “SoundSpot”: An Experimental Study

*Akiko Deguchi, Hiroshi Mizoguchi, Shigenori Inagaki, Fusako Kusunoki*

Reification Method to Encourage the Learning Communication on Meta-Cognition

*Kazuhisa Seta, Mitsuru Ikeda*

An Important Posting Notification Function in an Intelligent Bulletin Board System for e-Learning

*Takashi Yukawa, Hiraku Amarume, Yoshimi Fukumura*

**Session IS04: Engineered Applications of Semantic Web - SWEA (15:30, room D)**

**Chair: Tommaso Di Noia, Eugenio di Sciascio, Giovanni Semeraro**

LODE: Global Reasoning on E-Stories for Deaf Children

*Rosella Gennari, Ornella Mich*

NavEditOW - A System for Navigating, Editing and Querying Ontologies through the Web

*Andrea Bonomi, Alessandro Mosca, Matteo Palmonari, Giuseppe Vizzari*

Personalized interfaces for a semantic web portal: tourism information search

*Zeina Jrad, Marie-Aude Aufaure*

Semantic Bayesian Profiling Services for Information Recommendation

*Pierpaolo Basile, Eufemia Tinelli, Marco Degemmis, Tommaso Di Noia, Giovanni Semeraro, Eugenio Di Sciascio*

Shaping Personal Information Spaces from Collaborative Tagging Systems

*Fabio Abbattista, Fabio Calefato, Domenico Gendarmi, Filippo Lanubile*

**September 14**

**Session GT14: Other Intelligent Systems Applications (10:30, room F)**

**Chair: Viacheslaw Shkodirev, Floriana Esposito**

A Query-Strategy-focused Taxonomy and a Customizable Benchmarking Framework for Peer-to-Peer Information Retrieval Techniques

*Alfredo Cuzzocrea*

An Approach for Four Way Set Associative Multilevel CMOS Cache Memory

*Prasanna Palsodkar, Amol Deshmukh, Preeti Bajaj, Avinash G. Keskar*

An Intelligent Typhoon Damage Prediction System from Aerial Photographs

*Chien-Chang Hsu, Zhi-Yu Hong*

GIGISim - The Intelligent Telehealth System. Computer Aided Diabetes Management - a New Review

*Joanna Koleszynska*

ID-Based Authentication for the Security in the Mobile Node

*Young-bok Cho, Yoon-su Jeong, Sang-ho Lee*

Implementation of Intelligent Active Fault Tolerant Control System

*Seda Postalcioglu, Kadir Erkan, Dr. E. Dogru Bolat*

Inductive Concept Retrieval and Query Answering with Semantic Knowledge Bases through Kernel Methods

*Nicola Fanizzi, Claudia d'Amato*

New Machine Scores and Their Combinations for Automatic Mandarin Phonetic Pronunciation Quality Assessment

*Fuping Pan, Qingwei Zhao, Yonghong Yan*

## **Session GT01: Artificial Neural Networks and Connectionists Systems (17:30, room F)**

**Chair: Ryohei Nakano**

A Simple and Effective Neural Model for the Classification of Structured Patterns

*Edmondo Trentin, Ernesto Di Iorio*

Design of Neural Networks

*Claudio Moraga*

Geometric Algebra Rotors for Sub-Symbolic Coding of Natural Language Sentences

*Giovanni Pilato, Agnese Augello, Giorgio Vassallo, Salvatore Gaglio*

Online Training of Hierarchical RBF

*Francesco Bellocchio, Stefano Ferrari, Vincenzo Piuri, N. Alberto Borghese*

Selecting Features by Learning Markov Blankets

*Antonino Freno*

**Session IE06: Computation Intelligence for Multimedia Processing and Pattern Recognition (10:30, room A)**

**Chair: Yen-Wei Chen**

Audio Watermarking Based on the Psychoacoustic Model and Modulated Complex Lapped Transform

*Hanane Mirza, Alexander Adli, Hien D Thai, Yasunori Nagata, Zensho Nakao*

Curvelet-Domain Image Watermarking Based on Edge-embedding

*Thai Duy Hien, Ikeda Kei, Hanane Harak, Yen Wei Chen, Yasunori Nagata, Zensho Nakao*

Linking KANSAI and Image Features by Multi-layer Neural Networks

*Xinyin Huang, Shouta Sobue, Tomoki Kanda and Yen-Wei Chen*

Pattern Analysis and Prediction of O-linked Glycosylation Sites in Protein by Principal Component Subspace Analysis

*Yen-Wei Chen, Xuemei Yang, Masahiro Ito, Ikuko Nishikawa*

Prediction of the O-glycosylation with secondary structure information by Support Vector Machines

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

A Content Dependent Visualization System for Symbolic Representation of Piano Stream

*Alexander Adli, Zensho Nakao, Yasunori Nagata*

**Session IE07: Human Computer Intelligent Systems (12:30, room A)**

**Chair: Takumi Ichimura, Kazuya Mera**

Applying Trust, Reputation and Intuition aspects to Support Virtual Communities of Practice

*Juan Pablo Soto, Aurora Vizcaíno, Javier Portillo-Rodríguez, Mario Piattini*

Evaluation of Trivial Dialogue Phrase Databases through Practical Application to User-Computer Conversation - Case Study: English - Spanish

*Calkin S. Montero, Kenji Araki*

Formalizing Recognition of Sketching Styles in Human Centered Systems

*Danilo Avola, Fernando Ferri, Patrizia Grifoni*

Fostering Multi-Modal Summarization for Trend Information

*Tsuneaki Kato, Mitsunori Matsushita, and Noriko Kando*

Interactive Virtual Oriental Brush with Pen-tablet System

*Won-Du Chang, Jungpil Shin*



Multidimensional Emotional Appraisal Semantic Space (MEAS): Evaluating HM Affective Interactions.

*Maria Rita Ciceri, Stefania Barlarotti*

Multimodal Sentence Similarity in Human-Computer Interaction Systems

*Fernando Ferri, Patrizia Grifoni, Stefano Paolozzi*

## **Session IE12: Intelligent and Adaptive Systems in Economics, Finance and Management (10:30, room E1)**

**Chair: Marco Corazza, Norio Baba**

Credal Networks for Operational Risk Measurement and Management

*Alessandro Antonucci, Alberto Piatti, Marco Zaffalon*

Fair Consistency Evaluation in Fuzzy Preference Relations and in AHP

*Matteo Brunelli, Michele Fedrizzi*

Making Financial Trading by Recurrent Reinforcement Learning

*Francesco Bertoluzzo, Marco Corazza*

Multiple Ant Colony Optimization for a Rich Vehicle Routing Problem: a Case Study

*Paola Pellegrini, Daniela Favaretto, Elena Moretti*

Portfolio Optimization through Elastic Maps: some evidence from the Italian Stock Exchange

*Marina Resta*

Prediction of Golden Cross & Dead Cross by Neural Networks and Its Utilization

*Norio Baba, Kou Nin*

Adaptive Use of Technical Indicators for Predicting the Intra-day Price Movements

*Mieko Tanaka-Yamawaki, Seiji Tokuoka*

## **Session IE11: Intelligent Agents and Their Applications (17:30, room E1)**

**Chair: Dharmendra Sharma, Wanli Ma, Haeng Kon Kim, Dariusz Król**

A Design and Testing Technology for Ubiquitous Robot Companion Software Component

*Sun-Myung Hwang, Yun-Koo Chung*

An Architecture for Agent Coordination and Cooperation

*Angela Consoli, Jeffrey Tweedale, Lakhmi Jain*

Comparison of Mamdani and TSK Fuzzy Models for Real Estate Appraisal

*Dariusz Król, Tadeusz Lasota, Bogdan Trawiński, Krzysztof Trawiński*

Multi-agent Processing for Query Camouflage via Data Perturbation in Online Medical Surveys

*Nazni Farooq, Xu Huang, Dhamendra Sharma*

### **Session IK08: Knowledge-Based Creativity Support Systems (10:30, room E2)**

**Chair: Susumu Kunifuji, Motoki Miura, Kazuo Misue**

Data Mining of Time-Series Medical Data by Formal Concept Analysis

*Kenji Sato, Yoshiaki Okubo, Makoto Haraguchi, Susumu Kunifuji*

A Case Study on Project-Management Training-Support Tools for Japanese/Chinese/Indian Offshore Development Engineers

*Sadamitsu Toyoda, Motoki Miura, Susumu Kunifuji*

Design and evaluation a knowledge management system by using mathematical model of knowledge transfer

*Kouji Aoyama, Takanori Ugai, Jun Arima*

Overview of Network Information by Using Anchored Maps

*Kazuo Misue*

Spreadsheet Interface which Simplifies the Visualization of the Network Structures

*Satoshi Koike, Kazuo Misue, Jiro Tanaka*

### **Session IK07: Knowledge Engineering in Multi Robot Systems (12:10, room E2)**

**Chair: Manuel Graña, Richard Duro**

Appearance-Based Multi-Robot Following Routes Using Incremental PCA

*Luis Payá, Oscar Reinoso, Arturo Gil, Jose M. Pedrero, Mónica Ballesta*

Contribution to legged robot visual servoing

*Zelmar Echegoyen, Alicia dAnjou, Manuel Graña*

ROBMAT: Teleoperation of a Modular Robot for Collaborative Manipulation

*Juan A. Escalera, Manuel Ferre, Rafael Aracil, José Baca*

### **Session IK06: Knowledge and Ontological Engineering for Intelligent Information System Development (KOS) (17:30, room E2)**

**Chair: Tatiana Gavrilova, Vyacheslav Shkodyrev**

An application of decision trees for rule extraction towards telecommunications fraud detection

*Constantinos S. Hilas, John N. Sahalos*

Learning Objects Repository for Training of Power Systems Operators  
*G. Arroyo-Figueroa, L. Argotte-Ramos, G. Rodríguez-Ortíz*

Mining Meaningful Student Groups Based on Communication History Records  
*Yang-Sae Moon, Hun-Young Choi, Hea-Suk Kim, Jinho Kim*

Ontological Engineering for Practical Knowledge Work  
*Tatiana Gavrilova*

### **Session IP05: Neural Information Processing for Data Mining (10:30, room B+C)**

**Chair: Ryohei Nakano, Kazumi Saito**

A Neural-based Approach to Facial Expression Mapping between Human and Robot  
*Minori Gotoh, Masayoshi Kanoh, Shohei Kato, Hidenori Itoh*

Interpretable Likelihood for Vector Representable Topic  
*Ken-ichi Fukui, Kazumi Saito, Masahiro Kimura, Masayuki Numao*

Nominally Piecewise Multiple Regression using a Four-Layer Perceptron  
*Yusuke Tanahashi, Daisuke Kitakoshi, Ryohei Nakano*

Prediction of Link Attachments by Estimating Probabilities of Information Propagation  
*Kazumi Saito, Ryohei Nakano, Masahiro Kimura*

### **Session IP06: Neural networks: advanced applications (11:50, room B+C)**

**Chair: Eros Pasero**

An Application of Machine Learning Methods to PM10 Level Medium-Term Prediction  
*Giovanni Raimondo, Alfonso Montuori, Walter Moniaci, Eros Pasero, Esben Almkvist*

Models for Identifying Structures in the Data: A Performance Comparison  
*Anna Esposito, Antonietta M. Esposito, Flora Giudicepietro, Maria Marinaro, Silvia Scarpetta*

Neural Network Prediction of the Roll Motion of a Ship for Intelligent Course Control  
*Viorel Nicolau, Vasile Palade, Dorel Aiordachioaie, Constantin Miho*

## **Session IP01: Computational Learning Methods for Unsupervised Segmentation (CLeMUS) (17:30, room B+C)**

**Chair: Emanuele Salerno, Simon Wilson**

Blind Source Separation Applied to Spectral Unmixing: Comparing Different Measures of Nongaussianity

*Cesar F. Caiafa, Emanuele Salerno, Araceli N. Proto*

Extracting Astrophysical Sources from Channel-Dependent Convolutional Mixtures by Correlated Component Analysis in the Frequency Domain

*Luigi Bedini, Emanuele Salerno*

Random Germs and Stochastic Watershed for Unsupervised Multispectral Image Segmentation

*Guillaume Noyel, Jesús Angulo, Dominique Jeulin*

Unsupervised Blind Separation and Deblurring of Mixtures of Sources

*Livio Fedeli, Ivan Gerace, Francesca Martinelli*

Unsupervised Detection of Mammogram Regions of Interest

*Michal Haindl, Stanislav Mikes, Giuseppe Scarpa*

## **Session IS07: Interactive visualization and clustering (10:30, room D)**

**Chair: Roberto Tagliaferri**

A new Multi-Layers Method to Analyze Gene Expression

*Davide Corona, Vito Di Gesù, Giosuè Lo Bosco, Luca Pinello, Guo-Cheng Yuan*

An interactive tool for data visualization and clustering

*Francesco Iorio, Gennaro Miele, Francesco Napolitano, Giancarlo Raiconi, Roberto Tagliaferri*

Assessing Clustering Reliability and Features Informativeness by Random Permutations

*Michele Ceccarelli, Antonio Maratea*

Discovering significant structures in clustered bio-molecular data through the Bernstein inequality

*Alberto Bertoni, Giorgio Valentini*

Evaluating Graph Kernel Methods for Relation Discovery in GO-annotated Clusters

*Daniele Merico, Italo Zoppis, Marco Antoniotti, Giancarlo Mauri*

Membership Embedding Space Approach and Spectral Clustering

*Stefano Rovetta, Francesco Masulli, Maurizio Filippone*

**Session IS02: Behavior Support in Advanced Learning collaboration (17:30, room D)**

**Chair: Toyohide Watanabe, Tomoko Kojiri**

Learning Phase Model Based Scaffolding and its Fading to Facilitate Collaborative Learning of Critical Thinking

*Kazuhisa Seta, Hiroki Satake, Motohide Umamo, Mitsuru Ikeda*

CSCLE Environment for “Six Thinking Hats” Discussion

*Yasuhisa Tamura, Shuichi Furukawa*

An Agent Oriented Environment for Collaborative Learning - Lessons Learned through Vocational Training on Software Design with UML -

*Ken Kuriyama, Kazuo Sakai*

A Learning Environment for Understanding of Program Division Patterns

*Shoichi Nakamura, Keisuke Suzuki, Setsuo Yokoyama, Youzou Miyadera*

Organization of Discussion Knowledge Graph from Collaborative Learning Record

*Masahide Kakehi, Tomoko Kojiri, Toyohide Watanabe, Takeshi Yamada, Tomoharu Iwata*

# Poster presentations

## September 12

### Session GT08: Miscellaneous Intelligent Algorithms (17:10, room E1)

**Chair: Honghai Liu**

Alternative Methods of Wave Motion Modelling

*Lukasz Korus*

Conceptual Enrichment of Locations Pointed Out by the User

*Ana Alves, Raquel Hervàs, Francisco C. Pereira, Pablo Gervàs, Carlos Bento*

Design of Urban Growth Probability Model by Using Spatial Association Rules

*Seonghwi Cho, Sungeon Hong, Jungyeop Kim, Soohong Park*

Detecting Individual Activities from Video in a Smart Home

*Oliver Brdiczka, Patrick Reignier, James Crowley*

Path Prediction of Moving Objects on Road Networks through Analyzing Past Trajectories

*Sang-Wook Kim, Jung-Im Won, Jong-Dae Kim, Miyoung Shin, Junghoon Lee, Hanil Kim*

Performance Evaluation of Embedded Garbage Collectors in CVM Environment

*Chang-Il Cha, Sang-Wook Kim, Ji-Woong Chang, Miyoung Shin*

### Session GT11: Knowledge Management and Ontologies (17:10, room E1)

**Chair: Guy Gouarderes, Gloria Wren, Lakhmi Jain**

An Ontology for Modelling Human Resources Management Based on Standards for e-Employment Services

*Asunción Gómez-Pérez, Jaime Ramírez, Boris Villazón-Terrazas*

Philosophy Ontology for Learning the Contents of Texts

*Jungmin Kim, Hyunsook Chung*

Reinforcement Learning of Competitive Skills with Soccer Agents

*Jinsong Leng, Colin Fyfe, Lakhmi Jain*

### Session GT12: Web Intelligence, Text and Multimedia Mining and Retrieval (17:10, room E1)

**Chair: Andreas Nuernberger**

An Association Method Using Concept-base

*Noriyuki Okumura, Eriko Yoshimura, Hirokazu Watabe, Tsukasa Kawaoka*

Location Name Extraction for User Created Digital Content Services  
*Dragan Jevtic, Zeljka Car, Marin Vukovic*

Understanding Support Method of Unknown Words Using Robot Type Search Engine  
*Kazuto Goto, Noriyuki Okumura, Hirokazu Watabe, Tsukasa Kawaoka*

## **Session GT13: Intelligent Signal processing, Control and Robotics (17:10, room E1)**

**Chair: Miroslav Karny**

AI Techniques for Waste Water Treatment Plant Control. Case Study: Denitrification in a Pilot-Scale SBR  
*Davide Sottara, Luca Luccarini, Paola Mello*

An Embedded Real-Time Automatic Lane-Keeping System  
*Salvatore Vitabile, Salvatore Bono, Filippo Sorbello*

Design of Intelligent Traffic Controller for Urban Traffic Light Systems  
*Yi-Sheng Huang, Sheng-Luen Chung, Ta-Hsiang Chung, Kazumi Nakamatsu*

Effects of Kinematics Design on Tracking Performance of Model-Based Adaptive Control  
*Serdar Kucuk*

Fault Detection with Evolution Strategies Based Particle Filter and Backward Sequential Probability Ratio Test  
*Katsuji Uosaki, Toshiharu Hatanaka*

Infringing Key Authentication of an ID-Based Group Key Exchange Protocol Using Binary Key Trees  
*Junghyun Nam, Juryon Paik, Youngsook Lee, Jin Kwak, Dr. Ung Mo Kim, Dongho Won*

Multiresolution ICA for Artifact Identification from Electroencephalographic Recordings  
*Nadia Mammone, Giuseppina Inuso, Fabio La Foresta, Francesco Carlo Morabito*

Neural Networks for Matching in Computer Vision  
*Giansalvo Cirrincione, Maurizio Cirrincione*

SNNR-Based Improved Multi-modal Fusion and Fission Using Fuzzy Value Based on WPS and Web  
*Jung-Hyun Kim, Kunag-Seok Hong*

Vision Technologies for Intelligent Vehicles  
*Massimo Bertozzi, Alberto Broggi, L. Bombini, C. Caraffi, S. Cattani, Pietro Cerri, Alessandra Fascioli, M. Felisa, R. I. Fedriga, S. Ghidoni, Paolo Grisleri, P. Medici, M. Paterlini, P. P. Porta, M. Posterli, P. Zani*



**Session IE01: Ambient Intelligence (17:10, room E2)**

**Chair: Cecilio Angulo-Bahon, Hongai Liu**

Geometrical Representation of Quantity Space and Its Application to Robot Motion Description

*Honghai Liu, David J. Brown, George M. Coghill*

**Session IE02: Artificial Intelligence Applications in Digital Content (17:10, room E2)**

**Chair: Mu-Yen Chen, Dr. Hsiao-Ya Chiu**

An Architecture for E-Learning System with Computational Intelligence

*Marc El Alami, Nicolas Casel, Denis Zampuniéris*

APD-A Tool for Identifying Behavioural Patterns Automatically from Click-stream Data

*I-Hsien Ting, Lillian Clark, Chris Kimble, Daniel Kudenko, Peter Wright*

Develop E-Learning Platform for Reinforcement Learning on Temperature Sensor

*Wen-Jye Shyr*

Scalable Vector Graphics (OpenVG) for Creating Animation Image in Embedded Systems

*Sang-Yun Lee, Sunghwan Kim, Jihoon Chung, Byung-Uk Choi*

**Session IE15: Intelligent Data Processing in Process Systems and Plants (17:10, room E2)**

**Chair: Tetsuo Fuchino, Yoshiyuki Yamashita**

A multi-agent approach to process design

*Rafael Batres, Hikaru Takashima*

A Sliding-mode Control Approach in Ultra-precision Positioning System

*Insung Choi, Seungok Choi, Gunhaeng Heo, Kiheon Park, Kwanho You*

An Agent-based Early Manufacturability Assessment for Collaborative Design in Coating Process

*Chii-Ruey Lin, Pei-Shu Fan, Yea-Jou Shiau, MuDer Jeng*

**Session IE16: Intelligent Mechanism for Knowledge Innovation (17:10, room E2)**

**Chair: Toyohide Watanabe, Teketoshi Ushiana**

Scalable 2-Pass Data Mining Technique for Large Scale Spatio-Temporal Datasets

*Tahar Kechadi, Michela Bertolotto*

**Session IE19: Logic based intelligent information systems  
(17:10, room E2)**

**Chair: Kazumi Nakamatsu**

Intelligent Design of Diagnosable Systems: A Case Study of Semiconductor Manufacturing Machines

*YuanLin Wen, ShengLuen Chung, MuDer Jeng, LiDer Jeng*

**Session IP02: Computational methods for intelligent neuro-fuzzy applications (17:10, room E2)**

**Chair: Gwi-Tai Park, Dongwon Kim**

Implementation of Vision Based Walking Assistant System for Biped Robot

*Tae-Koo Kang, Dongwon Kim, Gwi-Tae Park*

The Development of Interactive Feature Selection and GA Feature Selection Method for Emotion Recognition

*Kwee-Bo Sim, In-Hun Jang, Chang-Hyun Park*

**Session IP08: Soft computing approach to management engineering (17:10, room E2)**

**Chair: Junzo Watada, Huey-Ming Lee, Taki Kanda**

An Analysis of Feelings of Brassiere-Wearing and Possibility to Simulate Them based on Body Shape

*Dong-Eun Choi*

**Session IK01: Chance Discovery (17:10, room D)**

**Chair: Akinori Abe, Yukio Ohsawa**

A Method for Visualising Possible Contexts

*Shigeki Amitani, Ernest Edmonds*

Creating Chances through Cognitive Niche Construction. The Role of Affordances

*Lorenzo Magnani*

RFID Tags without Customers ID in Book Library for Detecting Latent Interest of User Group

*Yukio Ohsawa, Takuma Hosoda, Takeshi Ui, Misato Ueda, Hirofumi Tanaka*

Trigger to switch individual's interest toward unconscious preference

*Yoshiharu Maeno, Ito Takaichi, Ohsawa Yukio*

Visualization of Similarities and Dissimilarities in Rules using Multidimensional Scaling

*Shusaku Tsumoto, Shoji Hirano*

**Session IK09: Knowledge-based Multi-criteria Decision Support (17:10, room D)**

**Chair: Hsuan-Shih Lee**

A Fuzzy Ranking Approach to Data Envelopment Analysis

*Hsuan-Shih Lee, Pei-Di Shen, Wen-Li Chyr*

A New Information Fusion Method for Fuzzy Information Retrieval

*Hsuan-Shih Lee, Ming-Tao Chou, Wei-Kuo Tseng, Hsin-Hsiung Fang, Chen-Huei Yeh*

An Analytic Approach for Synthesizing Comparison Matrices in AHP

*Hsuan-Shih Lee, Cheng-Chi Chung, Su-Man Wang, Ming-Tao Chou, Chen-Huei Yeh*

Estimating Missing Values in Incomplete Additive Fuzzy Preference Relations

*Hsuan-Shih Lee, Ming-Tao Chou, Hsin-Hsiung Fang, Wei-Kuo Tseng, Chen-Huei Yeh*

Fuzzy Logic Based Reputation System for Mobile Ad Hoc Networks

*Jin-Long Wang, Shih-Ping Huang*

Synthesizing Comparison Matrices of AHP under Group Decision

*Ming-Tao Chou, Hsuan-Shih Lee, Ching-Wu Chu, Chao-Yuan Cheng*

**Session IS01: Advanced Cooperative Work (17:10, room D)**

**Chair: Jun Munemori, Takashi Yoshino, Takaya Yuizono**

Data Selection Interfaces for Knowledge Creative Groupware using Chat Data

*Takaya Yuizono, Akifumi Kayano, Jun Munemori*

Dual Communication System Using Wired and Wireless in Home-network

*Kunihiro Yamada, Takashi Furumura, Kakeru Kimura, Takashi Kaneyama, Kouji Yoshida, Masanori Kojima, Hiroshi Mineno, Tadanori Mizuno*

Integrity Maintenance System of Database Query under Updating

*Tsukasa Kudou, Nobuhiro Kataoka, Tadanori Mizuno*

Proposal of Butler-type service model for personalized service

*Norio Yamaguchi, Makoto Okita, Masahiro Itou, Takayuki Shigematsu, Osamu Takahashi, Eiichi Miyamoto*

State-Based Pipelining for Reprogramming Wireless Sensor Network  
*Takuya Miyamaru, Hiroshi Mineno, Yoshiaki Terashima, Yuichi Tokunaga, Tadanori Mizuno*

The recommendation system using Mathematical programming model  
*Masahiko Ishino, Naokazu Yamaki, Teruhisa Ichikawa, Tadanori Mizuno*

Verification of the Applicability to Contents Assessment System of the Chat System Using Sense of Touch  
*Hajime Yoshida, Junko Itou, Jun Munemori, Norio Shiratori*

### **Session IS03: Context-Aware Adaptable Systems and Their Applications (17:10, room D)**

**Chair: Phill Kyu Rhee, Rezaul Bashar**

Predictive and Contextual Feature Separation for Bayesian Metanetworks  
*Vagan Terziyan*

Study on Method of Route Choice Problem Based on User Preference  
*Woo-Kyung Choi, Seong-Joo Kim, Tae-Gu Kang, Hong-Tae Jeon*

## **September 13**

### **Session GT04: Machine Learning and Classical AI (17:10, room F)**

**Chair: Floriana Esposito**

A Hybrid Symbolic-Statistical Approach to Modeling Metabolic Networks  
*Marenglen Biba, Stefano Ferilli, Nicola Di Mauro, Teresa M. A. Basile*

Sub-Symbolic Mapping of Cyc Microtheories in Data-Driven “Conceptual” Spaces  
*Giovanni Pilato, Agnese Augello, Mario Scriminaci, Giorgio Vassallo, Salvatore Gaglio*

### **Session GT05: Agent Systems (17:10, room F)**

**Chair: Ngoc Thanh Nguyen**

An Investigation of Agent-Based Hybrid Approach to Solve Flowshop and Job-Shop Scheduling Problems  
*Joanna Jedrzejowicz, Piotr Jedrzejowicz*

Determining Consensus with Dependencies of Set Attributes using Symmetric Difference  
*Michał Zgrzywa*

Network Simulation in a Fragmented Mobile Agent Network

*Mario Kusek, Gordan Jezic, Kresimir Jurasovic, Vjekoslav Sinkovic*

RSS-based Blog Agents for Educational Applications

*Euy-Kyung Hwang, Yang-Sae Moon, Hea-Suk Kim, Jinho Kim, Sang-Min Rhee*

Soft Computing Approach to Contextual Determination of Grounding Sets for Simple Modalities

*Radosław P. Ktarzyniak, Ngoc Thanh Nguyen, Lakhmi C. Jain*

Toward a Novel Multi-Modal HCI: Fusion Architecture Using Confidence Score and Fuzzy Value

*Jung-Hyun Kim, Jeh-Seon Youn, Kwang-Seok Hong*

Using Uncertainties as Basis for Evaluating Plans

*Christofer Waldenström*

## **Session GT06: Knowledge Based and Expert Systems (17:10, room F)**

**Chair: Anne Håkansson**

A Knowledge Sorting and Matrix Representation Approach for Developing Knowledge-based Product Design Systems

*Zhiming Rao, Chun-Hsien Chen*

Knowledge Based Industrial Maintenance using Portable Devices and Augmented Reality

*Carlos Toro, Cesar Sanín, Javier Vaquero, Jorge Posada, Edward Szczerbicki*

Parallel Computations for Logic-Algebraic Based Expert Systems

*Leszek Borzemski, Mariusz Fras*

Process Control of an Event Filter Farm for a Particle Physics Experiment Based on Expert System Technology

*Kristina Marasovic, Bojana Dalbelo-Basic, Vuko Brigljevic*

The CTCN Temporal Model for Representing Knowledge in the Sleep Apnea Syndrome Diagnostic Task

*Ángel Fernández-Leal, Vicente Moret-Bonillo*

## **Session GT09: Intelligent Vision and Image Processing (17:10, room F)**

**Chair: Tuan Pham**

A Study on the Gesture Recognition based on the Particle Filter

*Hyung Kwan Kim, Yang Weon Lee, Chil Woo Lee*

Intelligent Monitoring System for Driver's Alertness (A Vision Based Approach)  
*Rashmi Parsai, Preeti Bajaj*

Real-Time Vision Based Multiple People Gesture Recognition for Human-Robot Interaction  
*Seok-ju Hong, Nurul Arif Setiawan, Chil-woo Lee*

Step-by-Step Description of Lateral Interaction in Accumulative Computation  
*Antonio Fernández-Caballero, Miguel A. Fernández, María T. López, Francisco J. Gómez*

Suitability of Edge Segment based Moving Object Detection for Real Time Video Surveillance  
*M. Julius Hossain, M. Ali Akber Dewan, Oksam Chae*

### **Session IE03: Artificial Intelligence Applications in Security (17:10, room E1)**

**Chair: Emilio Corchado, Rodolfo Zunino**

Network-based Anomaly Intrusion Detection Improvement by Bayesian Network and Indirect Relation  
*ByungRae Cha, DongSeob Lee*

A Data Mining Methodology for Anomaly Detection in Network Data  
*Costantina Caruso, Donato Malerba*

### **Session IE04: Artificial Intelligence Methods for Information Processing (AIMIP 2007) (17:10, room D)**

**Chair: Lifeng Xi, Kun Gao**

A Novel Image Edge Detection Using Fractal Compression  
*Liangbin Zhang, Lifeng Xi*

A Rapid Algorithm for Computing ST Reliability of Radio-communication networks  
*Fei Gao, Xuejun Liu, Hanzhong Liu*

A second-order upwind difference scheme for a singularly perturbed problem with integral boundary condition in neural network  
*Zhongdi Cen, Xin Cai*

Application of Genetic Algorithm to Hausdorff Measure Estimation of Sierpinski carpet  
*Qili Xiao, Lifeng Xi*

Automated Planning and Replanning in an Intelligent Virtual Environments for Training  
*Jaime Ramírez, Dr. Angélica de Antonio*

Decomposability of implication operators

*Zhudeng Wang*

Fault Detecting Technology Based on BP Neural Network Algorithm

*Ran Jin, Kun Gao, Zhigang Chen, Chen Dong, Yanhong Zhang, Lifeng Xi*

Image Information Hiding Encryption Using Chaotic Sequence

*Zhen Liu, Lifeng Xi*

Improvement of an Image Encryption Algorithm Based on Combined Multi-dimensional Chaotic Systems

*Chen Dong, Jifang Li, Lifeng Xi, Jie Hao, Ran Jin*

Investigation on Fitting Graph Based on Fractal Dimensions Pretreatment

*Min Jin, Qin Wang, Xi Lifeng*

Practice of Video Encryption Algorithms Based on Chaotic Sequence and Scan Pattern

*Qian Li*

Research on WebGIS based on Multi-Agent

*Taowei Wang, Liangbin Zhang, Aimin Yang*

## **Session IE05: Communicative Intelligence 2007 (17:10, room E2)**

**Chair: Toyoaki Nishida, Ngoc Thanh Nguyen**

A Pattern Recognition Algorithm Used in Knowledge-Based Adaptive Control System to Select Strategy

*Krzysztof Brzostowski, Jerzy Swiatek*

A simple model for human-robot emotional interaction

*Isabella Cattinelli, N. Alberto Borghese*

Alignment-based Preprocessing of Personal Ontologies on Semantic Social Network

*Jason J. Jung, Hong-Gee Kim, Geun-Sik Jo*

Browser Latency Impact Factors

*Andrzej Siemiński*

Global Adaptive Request Distribution with Broker

*Leszek Borzemski, Anna Zatwarnicka, Krzysztof Zatwarnicki*

Global and Local Approach to Complex Systems Modeling using Dynamic Neural Networks - Analogy with Multiagent Systems

*Drapała, Jarosław, Jerzy Świątek*

**Session IE08: Hybrid Artificial Intelligence Systems Workshop (HAIS07-KES2007) (17:10, room E1)**

**Chair: Juan M. Corchado, Emilio Corchado**

Architecture of an hybrid system for experimentation on Web Information Retrieval incorporating Clustering Techniques

*Montserrat Mateos , Carlos G. Figuerola*

FreeEnCal: A Forward Reasoning Engine with General-Purpose

*Jingde Cheng, Shinsuke Nara, Yuichi Goto*

Hybrid Agents Based Architecture on Automated Dynamic Environments

*Dante Israel Tapia, Javier Bajo, Juan M. Corchado, Sara Rodríguez, Juan M. Manzano*

Learning Topologic Maps with Growing Neural Gas

*José García-Rodríguez, Francisco Flórez-Revuelta, Juan Manuel García-Chamizo*

Adaptive Mechanisms for Classification Problems with Drifting Data

*Zoheir Sahel, Abdelhamid Bouchachia, Bogdan Gabrys, Paul Rogers*

**Session IE13: Intelligent Automation Systems (17:10, room E2)**

**Chair: MuDer Jeng**

Design of a Simulated Environment for Flexible Manufacturing Systems

*Yi-Sheng Huang, Pin-June Su*

MyHome: a Residential Server for Smart Homes

*Sheng-Luen Chung, Wen-Yuan Chen*

Semi-automatic Production Testing of Spark Plugs

*Simon D. Walters, Peter A. Howson, Robert J. Howlett*

**Session IP04: Learning from uncertain data (17:10, room E1)**

**Chair: Dario Malchiodi**

A Neuro-Fuzzy Approach for Sensor Network Data Cleaning

*Alfredo Petrosino, Antonino Staiano*

Learning Bayesian Networks Using Evolutionary Algorithm and a Variant of MDL Score

*Fengzhan Tian, Yanfeng Zhang, Zhihai Wang, Houkuang Huang*

SVM with Random Labels

*Bruno Apolloni, Simone Bassis, Dario Malchiodi*



**Session IK03: Knowledge - Based Interface Systems (I)**  
**(17:10, room E2)**

**Chair: Naohiro Ishii, Yuji Iwahori**

DACS Web Service

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

**Session IK04: Knowledge - Based Interface Systems (II)**  
**(17:10, room E2)**

**Chair: Yoshinori Adachi, Nobuhiro Inuzuka**

The Characteristics Evaluation of Stacked-type Electrostatic Actuators by the Neural Network

*Masashi Kawaguchi, Katsuhisa Yamano, Kazuo Okuda, Takashi Jimbo, and Naohiro Ishii*

**Session IK05: Knowledge and Information Management in Social Community (17:10, room E2)**

**Chair: Toyohide Watanabe, Naoto Mukai, Jun Feng**

Building the virtual community to support Interregional exchange between rural and urban

*Yoshida Chiho, Yasuda Takami, Yokoi Shigeki*

**Session IK10: Knowledge Based Systems for e-business (17:10, room E2)**

**Chair: Kazuhiko Tsuda, Masakazu Takahashi**

A Proposal of Adequate and Efficient Designing of UML Documents for beginners

*Masakazu Takahashi, Satoru Takahashi, Yoshikatsu Fujita*

An Estimation Method of FAQ Service Quality by Introducing Measurements

*Jun-ichi Aoe (Dept. of Information Science and Intelligent Systems) Elsayed Atlam*

Analysis of the Relation between Stock Price Returns and Headline News Using Text Categorization

*Satoru Takahashi, Masakazu Takahashi, Hiroshi Takahashi, Kazuhiko Tsuda*

Evaluation of a Hierarchical Shaper as a Policy Execution Point

*Takeshi Aimoto, Takeki Yazaki, Takashi Isobe, Yoshihiko Sakata, Kenichi Yoshida*

Query Message Delivery over Community-based Overlay Network  
*Yoshikatsu Fujita, Yasufumi Saruwatari, Jun Yoshida, Kazuhiko Tsuda*

Relation Analysis on Information System Life Cycle Processes by KeyGraph Algorithms  
*Tadashi Tsukahara, Atsuo Hazeyama, Kazuhiko Tsuda*

### **Session IS04: Engineered Applications of Semantic Web - SWEA (17:10, room E2)**

**Chair: Tommaso Di Noia, Eugenio di Sciascio, Giovanni Semeraro**

A Hierarchical Clustering Method for Semantic Knowledge Bases  
*Nicola Fanizzi, Claudia d'Amato*

An Automatic Method for Ontology Mapping  
*Liya Fan, Tianyuan Xiao*

Improving Smart Environments with Knowledge Ecosystems  
*Fulvio Mastrogiovanni, Antonio Sgorbissa, Renato Zaccaria*

SAM: a Semantic Web service discovery system  
*Antonio Brogi, Sara Corfini*

Semantics driven interaction using natural language in students tutoring  
*Roberto Pirrone, Giovanni Pilato, Riccardo Rizzo, Giuseppe Russo*

Towards a domain oriented and independent Semantic Search Model  
*Zhixian Yan, Ying Ding, Emilia Cimpian*

User modeling in the social web  
*Francesca Carmagnola, Federica Cena, Cristina Gena*

### **Session IS05: Environment Support in Advanced Learning collaboration (17:10, room E2)**

**Chair: Toyohide Watanabe, Tomoko Kojiri**

Filtering of Web Recommendation Lists Using Positive and Negative Usage Patterns  
*Przemyslaw Kazienko*

Immersive Round-table Interface in Collaborative Learning  
*Yuki Hayashi, Tomoko Kojiri, Toyohide Watanabe*

## Session IS06: Immunity-based systems (17:10, room E2)

**Chair: Yoshiteru Ishida, Giuseppe Nicosia**

A Note on Symmetries on Equations of Population Dynamics and Stability Conditions

*Yoshiteru Ishida*

Experimental analysis of the Aging operator for static and dynamic optimisation problems

*Mario Castrogiovanni, Giuseppe Nicosia, Rosario Rascunà*

Fuzzy Rule Induction and Artificial Immune Systems in Female Breast Cancer Familiarity Profiling

*Filippo Menolascina, Roberto T. Alves, Stefania Tommasi, Patrizia Chiarappa, Myriam Delgado, Vitoantonio Bevilacqua, Giuseppe Mastronardi, Alex A. Freitas, Angelo Paradiso*

Performance Evaluation of Immunity-based Diagnosis on Complex Networks

*Yuji Watanabe, Yoshiteru Ishida*

Symmetries on Asymmetric Wars: Generalists (HIVs) versus Specialists (T-cells)

*Yoshiteru Ishida*

## September 14

### Session GT01: Artificial Neural Networks and Connectionists Systems (15:30, room F)

**Chair: Ryohei Nakano**

A New Neural Network with Adaptive Activation Function for Classification of ECG Arrhythmias

*Gülay Tezel, Yüksel Özbay*

Boosting Support Vector Machines using Multiple Distances

*Ángela Blanco, Manuel Martín-Merino*

CSFNN Synapse and Neuron Design using Current Mode Analog Circuitry

*Burcu Erkmén, Tülay Yldrm*

Fast Fingerprints Classification only using the Directional Image

*Vincenzo Conti, Davide Perconti, Salvatore Romano, G.Tona, Salvatore Vitabile, Salvatore Gaglio, Filippo Sorbello*

Neural Network Models for Abduction Problems Solving

*Viorel Ariton, Doinita Ariton*

## **Session GT02: Granular Computing (15:30, room F)**

**Chair: Detlef Nauck, Zensho Nakao**

ANFIS Based Emotions Recognition in Speech  
*Shubhangi Giripunje, Narendra Bawane*

Binary Particle Swarm Optimization for Black-Scholes Option Pricing  
*Sangwook Lee, Jusang Lee, D. Shim, Moongu Jeon*

Design of Very High-speed Integer Fuzzy Controller without Multiplications by Using VHDL  
*Sang-gu Lee, Michio Miyazaki, Jin-il Kim*

Fuzzy Fusion in Multimodal Biometric Systems  
*Vincenzo Conti, Giovanni Milici, Patrizia Ribino, Filippo Sorbello, Salvatore Vitabile*

Parameter Determination of Induction Machines by Hybrid Genetic Algorithms  
*Mümtaz Mutluer, Osman Bilgin, Mehmet Cunkas*

## **Session GT14: Other Intelligent Systems Applications (15:30, room F)**

**Chair: Viacheslaw Shkodirev, Floriana Esposito**

A Geographic Event Management, Based on Set Operation among Geographic Objects  
*Masakazu Ikezaki, Toyohide Watanabe, Taketoshi Ushiyama*

A Method for Judging Illogical Discourse Based on Concept Association and Common-Sense Judgment  
*Eriko Yoshimura, Noriyuki Okumura, Hirokazu Watabe, Tsukasa Kawaoka*

Analysis and Research of Predictive Algorithm in NCS with Time Delay  
*Zaiping Chen, Rui Lou, Xunlei Yin, Nan Yang, Gang Shao*

Determination of Illuminance Level Using ANN Model  
*Vedat Topuz, Selcuk Atis, Sureyya Kocabey, Mehmet Tektas*

Efficient Content Distribution Method based on Location and Similarity in Unstructured P2P System  
*Suhong Min, Byong Lee, Dongsub Cho*

Image Mining Using Wavelet Transform  
*Sanjay T. Gandhe, Kiran T. Talele, Avinash G. Keskar*

Natural Language Understanding for Generating Grasp Actions  
*Hirokazu Watabe, Seiji Tsuchiya, Yasutaka Masuda, Tsukasa Kawaoka*

Particle Swarm Optimization Applied to Vertical Traffic Scheduling in Buildings  
*Zhonghua Li, Hong-Zhou Tan, Yunong Zhang*

Person Identification Using Lip Motion Sequence  
*Dr. Salina Abdul Samad, Dzati Athiar Ramli, Aini Hussain*

Proposal of Method to Judge Speaker's Emotion based on Association Mechanism  
*Seiji Tsuchiya, Eriko Yoshimura, Hirokazu Watabe, Tsukasa Kawaoka*

The Automatic Peer-to-Peer Signature for Source Address Validation  
*Yan Shen, Jun Bi, Jianping Wu, Quiang Liu*

Traffic Demand Prediction using ANN Simulator  
*Vedat Topuz*

### **Session IE06: Computation Intelligence for Multimedia Processing and Pattern Recognition (15:30, room E1)**

**Chair: Yen-Wei Chen**

A New Optimization Algorithm of Kinofoms Based on Simulated Annealing  
*Shinya Nozaki, Yen-Wei Chen, Zensho Nakao*

### **Session IE07: Human Computer Intelligent Systems (15:30, room E1)**

**Chair: Takumi Ichimura, Kazuya Mera**

Reconsideration of the Effectiveness on Extracting Computer Diagnostic Rules by Automatically Defined Groups  
*Yoshiaki Kurosawa, Akira Hara, Kazuya Mera, and Takumi Ichimura*

### **Session IE11: Intelligent Agents and Their Applications (15:30, room E1)**

**Chair: Dharmendra Sharma, Wanli Ma, Haeng Kon Kim, Dariusz Król**

A Multiagent Based Vehicle Engine Fault Diagnosis  
*Xiaobing Wu, Xueshan Gao, Dharmendra Sharma*

A Multi-Agent Security Framework for e-Health Services  
*Rossilawati Sulaiman, Dharmendra Sharma, Wanli Ma, Dat Tran*

A Proactive Routing Algorithm Based on Bitmap Tables for Wireless Sensor Networks  
*Sangjoon Jung, Younky Chung*

A study on mobile agent based resource management in Grid  
*Chen Zhao, Jian Yu, Bencheng Chai*

An Agent-Based Evolutionary Robotic System for its Reconfiguration  
*Xueshan Gao, Koki Kikuchi, Xiaobing Wu*

Design of the Intelligence User Identification Method for the Improved Password  
Input Method and the Personality Security  
*Eun-Ser Lee, Haeng-Kon Kim, Sang Ho Lee*

Using Tuple Space to Coordinate Multiagent Activities  
*Wanli Ma, Dat Tran, Dharmendra Sharma*

### **Session IP05: Neural Information Processing for Data Mining (15:30, room E1)**

**Chair: Ryohei Nakano, Kazumi Saito**

Learning Evaluation Functions of Shogi Positions from Different Sets of Games  
*Kosuke Inagaki, Ryohei Nakano*

Pivot Learning for Efficient Similarity Search  
*Manabu Kimura, Kazumi Saito, Naonori Ueda*

### **Session IP06: Neural networks: advanced applications (15:30, room E1)**

**Chair: Eros Pasero**

A Kernel Based Learning by Sample Technique for Defect Identification through  
the Inversion of a Typical Electric Problem  
*Matteo Cacciola, Maurizio Campolo, Fabio La Foresta, Francesco Carlo Morabito, Mario Versaci*

Adaptive Neural Network Approach for Nonlinearity Compensation in Laser  
Interferometer  
*Gunhaeng Heo, Wooram Lee, Seungok Choi, Jeehyong Lee, Kwanho You*

Handwritten Greek Character Recognition with Learning Vector Quantization  
*Francesco Camastra*

Real Time Reader Device for Blind People  
*Paolo Motto Ros, Eros Pasero*

SVM-based Time Series Prediction with Nonlinear Dynamics Methods  
*Francesco Camastra, Maurizio Filippone*

**Session IK06: Knowledge and Ontological Engineering for Intelligent Information System Development (KOS) (15:30, room E2)**

**Chair: Tatiana Gavrilova, Vyacheslav Shkodyrev**

Assisting Dialogical Agents Modeled from Novice Users Perceptions  
*David Leray, Jean-Paul Sansonnet*

Combining Empirical Studies of Audio-Lingual and Visual-Facial Modalities for Emotion Recognition

*M. Virvou, G.A., Tsihrintzis, E. Alepis, I.-O. Stathopoulou, K. Kabassi*

Semantic Modeling of Product Manuals

*Rossitza Setchi, Nikolaos Lagos, Ammar Huneiti*

**Session IK07: Knowledge Engineering in Multi Robot Systems (15:30, room E2)**

**Chair: Manuel Graña, Richard Duro**

Incremental Evolution of Stigmergy-based Multi Robot Controllers through Utility Functions

*P. Caamaño, J.A. Becerra, R. J. Duro, F. Bellas*

Lattice Independence and Vision Based Mobile Robot Navigation

*I. Villaverde, M. Graña, J.L. Jimenez*

**Session IK08: Knowledge-Based Creativity Support Systems (15:30, room E2)**

**Chair: Susumu Kunifuji, Motoki Miura, Kazuo Misue**

A Modelling Framework for Sharing Knowledge

*Reyes Grangel, Ricardo Chalmeta, Cristina Campos*

An Assistant Interface for Finding Query-Related Proper Nouns

*Tomoya Iwakura, Kanji Uchino, Seishi Okamoto*

Community Support System for Extensive Readers: Case study in a Domain Knowledge Science

*Kohei Ishikawa, Kanayo Ogura, Kozo Sugiyama*

Development of a mimamori-care system for persons with dementia based on the real world-oriented approach

*Kenichi Nakagawa, Taro Sugihara, Hitoshi Koshiba, Ryozo Takatsuka, Naotaka Kato, Susumu Kunifuji*

**Session IS02: Behavior Support in Advanced Learning collaboration (15:30, room E2)**

**Chair: Toyohide Watanabe, Tomoko Kojiri**

Organizing Online Learning-Community Based on the Real World Log  
*Naka Gotoda, Kenji Matsuura, Kazuhide Kanenishi, Yoneo Yano*

Context-based Managing and Sharing of Personal Contents on Experience Web  
*Taketoshi Ushiyama, Toyohide Watanabe*

**Session IS08: Multi-agent systems design, implementation and applications (15:30, room E2)**

**Chair: Dharmendra Sharma, Bala. M. Balachandran**

A Comparison of Three Agent-Oriented Software Development Methodologies: ROADMAP, Prometheus and MaSE  
*Ebrahim Al-Hashel, Bala Balachandran, Dharmendra Sharma*

A Multi-agent Architecture for RFID Taxonomy  
*Son Le, Xu Huang, Dharmendra Sharma*

Adaptive Binary Splitting for a RFID Tag Collision Arbitration via Multi-Agent Systems  
*Xu Huang, Dat Tran*

Developing Multi-agent E-Commerce Applications with JADE  
*Bala Balachandran, Majisuren Enkhsaikhan*

**Session IS09: Multimedia Systems and its Applications focusing on Reliable and Flexible Delivery for Integrate Multimedia (Media07) (15:30, room E2)**

**Chair: Yun Ji Na, Il Seok Ko**

A New Authentication and Key Agreement Protocol Scheme in Convergence of UMTS and DVB-H Networks  
*SuJung Yu, JooSeok Song*

A Practical Provider Authentication System for Bidirectional Broadcast Service  
*Takahiro Matsuda, Goichiro Hanaoka, Kanta Matsuura, Hideki Imai*

Anonymous Authentication Scheme for Subscription Services  
*Arisa Fujii, Go Ohtake, Goichiro Hanaoka, Kazuto Ogawa*

Anonymous Pay-TV System with Secure Revenue Sharing  
*Kazuto Ogawa, Goichiro Hanaoka, Kazukuni Kobara, Kanta Matsuura, Hideki Imai*



Using Informed Coding and Informed Embedding to Design Robust Fingerprinting Embedding Systems

*Joan Tomàs-Buliart, Marcel Fernandez, Miguel Soriano*

**Session IS11: Recommender agents (15:30, room E2)**

**Chair: Dariusz Król, Janusz Sobecki**

A Process Based on the Representation of End-User Requirements for Generating Adaptable User Interfaces for Browsing XML Content

*Benoît Encelle, Nadine Baptiste-Jessel*

NBM and WNBm: Algorithms and Evaluation for personalizing information retrieval in METIORE

*David Bueno, Ricardo Conejo, Amos A. David, Cristina Carmona*

Web-based System User Interface Hybrid Recommendation Using Ant Colony Metaphor

*Janusz Sobecki*