

# ISDA'09 PROGRAM

## MONDAY – NOVEMBER 30<sup>TH</sup>

### **EVOLUTIONARY ALGORITHMS – PART 1**

Monday, November 30<sup>TH</sup>, 10:00 – 11:20 Auditorium

Chair: Carlos A. Coello Coello

Valley-Adaptive Clearing Scheme for Multimodal Optimization Evolutionary Search  
*Mostafa M.H. Ellabaan and Yew Soon Ong*

Handling Box, Linear and Quadratic-Convex Constraints for Boundary Optimization with Differential Evolution Algorithms  
*Massimo Spadoni and Luciano Stefanini*

Scaling Genetic Algorithms using MapReduce  
*Abhishek Verma, Xavier Llorà, David E. Goldberg and Roy H. Campbell*

Efficiency Enhancement of ECGA Through Population Size Management  
*Vinícius V. de Melo, Thyago S.P.C. Duque and Alexandre C.B. Delbem*

### **W1: SOFT COMPUTING IN INTELLIGENT AGENTS AND WEB TECHNOLOGIES – PART 1**

Monday, November 30<sup>TH</sup>, 10:00 – 11:20 Sala Fermi

Chair: Enrique Herrera-Viedma

RSS-generated Contents through Personalizing e-Learning Agents  
*Carmen De Maio, Giuseppe Fenza, Matteo Gaeta, Vincenzo Loia, Francesco Orciuoli and Sabrina Senatore*

Combining Agents and Ontologies to Support Task-Centred Interoperability in Ambient Intelligent Environments  
*Gaëtan Pruvost, Achilles Kameas, Tobias Heinroth, Lambrini Seremeti and Wolfgang Minker*

A Web-based Fuzzy Linguistic Tool to Filter Information in a Biomedical Domain  
*José Manuel Morales-del-Castillo, Eduardo Peis and Enrique Herrera-Viedma*

Agent-based Web Content Engagement Time (WCET) Analyzer on e-Publication System  
*Raymond S.T. Lee, James N.K. Liu, Karo S.Y. Yeung, Alan H.L. Sin and Dennis T.F. Shum*

### **W2: GENETIC FUZZY SYSTEMS: DESIGN AND APPLICATIONS – PART 1**

Monday, November 30<sup>TH</sup>, 10:00 – 11:20 Sala Pacinotti

Chair: Rafael Alcalá

Effects of Data Reduction on the Generalization Ability of Parallel Distributed Genetic Fuzzy Rule Selection  
*Yusuke Nojima and Hisao Ishibuchi*

Obtaining a Linguistically Understandable Random Sets-based Classifier from Interval-Valued Data with Genetic Algorithms  
*Luciano Sánchez and Inés Couso*

Handling High-Dimensional Regression Problems by Means of an Efficient Multi-Objective Evolutionary Algorithm  
*Maria José Gacto, Rafael Alcalá and Francisco Herrera*

Exploiting a New Interpretability Index in the Multi-Objective Evolutionary Learning of Mamdani Fuzzy Rule-based Systems  
*Michela Antonelli, Pietro Ducange, Beatrice Lazzerini and Francesco Marcelloni*

### **W3: INTELLIGENT IMAGE PROCESSING AND ARTIFICIAL VISION – PART 1**

Monday, November 30<sup>TH</sup>, 10:00 – 11:20 Sala Galilei

Chair: Ángel Sánchez

Natural Scene Image Recognition by Fusing Weighted Colour Moments with Bag of Visual Patches on Spatial Pyramid Layout

*Yousef Alqasrawi, Daniel Neagu and Peter Cowling*

A Fuzzy System for Impact Analysis of Advertisement Billboards in Soccer Telecast

*Suprio Das, Shamik Sural and Arun K. Majumdar*

GPU-Based Road Sign Detection using Particle Swarm Optimization

*Luca Mussi, Stefano Cagnoni and Fabio Daolio*

Improved Fuzzy Snakes Applied to Biometric Verification Problems

*Jose Vélez, Angel Sánchez and Felipe Fernández*

### **W4: HYBRID LEARNING FOR ARTIFICIAL NEURAL NETWORKS: ARCHITECTURES AND APPLICATIONS – PART 1**

Monday, November 30<sup>TH</sup>, 10:00 – 11:20 AulaB

Chair: César Hervás

A Sensitivity Clustering Method for Memetic Training of Radial Basis Function Neural Networks

*Francisco Fernández-Navarro, Pedro Antonio Gutiérrez and César Hervás-Martínez*

Hyperbolic Tangent Basis Function Neural Networks Training by Hybrid Evolutionary Programming for Accurate Short-Term Wind Speed Prediction

*César Hervás-Martínez, Pedro Antonio Gutiérrez, Juan Carlos Fernández, Sancho Salcedo-Sanz, Antonio Portilla-Figueras, Ángel Pérez-Bellido and Luis Prieto*

Hybridizing Ensemble Classifiers with Individual Classifiers

*Gonzalo Ramos-Jiménez, José del Campo-Ávila and Rafael Morales-Bueno*

Classification by Evolutionary Generalized Radial Basis Functions

*Adiel Castaño, César Hervás-Martínez, Pedro Antonio Gutiérrez, Francisco Fernández-Navarro and M. M. García*

### **EVOLUTIONARY ALGORITHMS – PART 2**

Monday, November 30<sup>TH</sup>, 11:30 – 12:50, Auditorium

Chair: Manuel Lozano Márquez

Solving Permutation Problems with Differential Evolution: An Application to the Jobshop Scheduling Problem

*Antonin Ponsich, Ma. Guadalupe Castillo Tapia and Carlos A. Coello Coello*

Speeding up the Genetic Algorithm Convergence Using Sequential Mutation and Circular Gene Methods

*Mehdi Baradaran Nia and Yousef Alipouri*

Performance Analysis of MADO Dynamic Optimization Algorithm

*Julien Lepagnot, Amir Nakib, Hamouche Oulhadj and Patrick Siarry*

Encoding Structures and Operators used in Facility Layout Problems with Genetic Algorithms

*Laura Garcia-Hernandez, Antonio Arauzo-Azofra, Henri Pierreval and Lorenzo Salas-Morera*

### **W1: SOFT COMPUTING IN INTELLIGENT AGENTS AND WEB TECHNOLOGIES – PART 2**

Monday, November 30<sup>TH</sup>, 11:30 – 12:50 Sala Fermi

Chair: Enrique Herrera-Viedma

CASTALIA: Architecture of a Fuzzy Metasearch Engine for Question Answering Systems

*Jesus Serrano-Guerrero, Jose Angel Olivas, Jesus A. Gallego, Francisco P. Romero and Andres Soto*

An Experiment about Using Copulative and Comparative Sentences as Constraining Relations

*Andrés Soto, José Angel Olivas, Francisco P. Romero and Jesús Serrano-Guerrero*

An Automat for the Semantic Processing of Structured Information

*Amed Leiva Mederos, Jose A. Senso, Sandor Dominguez-Velasco and Pedro Hípola*

Using Incomplete Fuzzy Linguistic Preference Relations to Characterize User Profiles in Recommender Systems

*Enrique Herrera-Viedma and Carlos Porcel*

## **W2: GENETIC FUZZY SYSTEMS: DESIGN AND APPLICATIONS – PART 2**

Monday, November 30<sup>TH</sup>, 11:30 – 12:30 Sala Pacinotti

Chair: Rafael Alcalá

On the Combination of Accuracy and Diversity Measures for Genetic Selection of Bagging Fuzzy Rule-based Multiclassification Systems

*Krzysztof Trawiński, Arnaud Quirin and Oscar Cordon*

Linguistic Modifiers to Improve the Accuracy-Interpretability Trade-off in Multi-Objective Genetic Design of Fuzzy Rule Based Classifier Systems

*Alessandro G. Di Nuovo and Vincenzo Catania*

Parallel Distributed Two-Level Evolutionary Multiobjective Methodology for Granularity Learning and Membership Functions Tuning in Linguistic Fuzzy Systems

*Miguel Angel De Vega, Juan Manuel Bardallo, Francisco Alfredo Márquez and Antonio Peregrin*

## **W3: INTELLIGENT IMAGE PROCESSING AND ARTIFICIAL VISION – PART 1**

Monday, November 30<sup>TH</sup>, 11:30 – 12:50 Sala Galilei

Chair: José Santamaría

Multiple Neural Networks System for Dynamic Environments

*Aldo Franco Dragoni, Paola Baldassarri, Germano Vallesi and Mauro Mazzieri*

A Comparative Study of Clustering Methods for Urban Areas Segmentation from High Resolution Remote Sensing Image

*Safaa M. Bedawi and Mohamed S. Kamel*

A New Scheme for Vision Based Flying Vehicle Detection Using Motion Flow Vectors Classification

*Ali Taimori, Alireza Behrad and Samira Sabouri*

Image Contrast Control based on Łukasiewicz's Operators and Fuzzy Logic

*Nashaat M. Hussein Hassan and Angel Barriga*

## **W4: HYBRID LEARNING FOR ARTIFICIAL NEURAL NETWORKS: ARCHITECTURES AND APPLICATIONS – PART 2**

Monday, November 30<sup>TH</sup>, 11:30 – 12:50 AulaB

Chair: Pedro Antonio Gutiérrez

Optimization of Neural Networks Weights and Architecture: A Multimodal Methodology

*Antonio Miguel F. Zarth and Teresa B. Ludermir*

Modeling Environmental Noise using Artificial Neural Networks

*Natalia Genaro, Antonio Jose Torija, Angel Ramos, Ignacio Requena, Diego Pablo Ruiz and Montserrat Zamorano*

Combining Uncertainty Sampling Methods for Active Meta-Learning

*Ricardo B.C. Prudêncio and Teresa B. Ludermir*

Echo State Network for Abrupt Change Detections in Non-stationary Signals

*Qingsong Song, Zuren Feng, Liangjun Ke and Min Li*

## **SWARM INTELLIGENCE**

Monday, November 30<sup>TH</sup>, 15:00 – 16:20 Auditorium

Chair: Ajith Abraham

Heuristic Factors in Ant System Algorithm for Course Timetabling Problem

*Djasli Djamarus and Ku Ruhana Ku-Mahamud*

A Multiple Objective Particle Swarm Optimization Approach using Crowding Distance and Roulette Wheel

*Robson A. Santana, Murilo R. Pontes and Carmelo J. A. Bastos-Filho*

Hardware Architecture for Particle Swarm Optimization using Floating-point Arithmetic

*Daniel M. Muñoz, Carlos H. Llanos, Leandro dos S. Coelho and Mauricio Ayala-Rincón*

Dynamic Clan Particle Swarm Optimization

*Carmelo J. A. Bastos-Filho, Danilo F. Carvalho, Elliackin M. N. Figueiredo and Pérciles B. C. de Miranda*

## **W5: TAGS AND RECOMMENDATIONS IN WEB 2.0 PART 1**

Monday, November 30<sup>TH</sup>, 15:00 – 16:20 Sala Fermi

Chair: Antonina Dattolo

Content-based Filtering with Tags: the FIRSt System

*Pasquale Lops, Marco de Gemmis, Giovanni Semeraro, Paolo Gissi, Cataldo Musto and Fedelucio Narducci*

Item Recommendation with Veristic and Possibilistic Metadata: a Preliminary Approach

*Danilo Dell'Agnetto, Corrado Mencar and Anna Maria Fanelli*

Neighbor Selection and Recommendations in Social Bookmarking Tools

*Antonina Dattolo, Felice Ferrara and Carlo Tasso*

Using Tag Co-occurrence for Recommendation

*Christian Wartena, Rogier Brussee and Martin Wibbels*

## **S1: REPRESENTATION AND APPROXIMATION OF FUZZY NUMBERS AND APPLICATIONS**

Monday, November 30<sup>TH</sup>, 15:00 – 16:20 Sala Pacinotti

Chairs: Luciano Stefanini, Przemyslaw Grzegorzewski

Fuzzy Option Value with Stochastic Volatility Models

*Gianna Figà-Talamanca and Maria Letizia Guerra*

Some Parametric Forms for LR Fuzzy Numbers and LR fuzzy Arithmetic

*Laerte Sorini and Luciano Stefanini*

Bi-symmetrically Weighted Trapezoidal Approximations of Fuzzy Numbers

*Przemyslaw Grzegorzewski and Karolina Pasternak-Winiarska*

Value Function Computation in Fuzzy Real Options by Differential Evolution

*Maria Letizia Guerra, Laerte Sorini and Luciano Stefanini*

## **W6: INTELLIGENT SYSTEMS DESIGN AND APPLICATIONS IN THE HEALTH DOMAIN PART 1**

Monday, November 30<sup>TH</sup>, 15:00 – 16:20 Sala Galilei

Chairs: Ovidio Salvetti, Ioannis Tollis

The Virtual Physiological Human NoE and Functional Brain Networks (Project: VPH NoE)

*Ioannis Tollis (invited talk) "*

CHRONIOUS: An intelligent system for chronic diseases management" (Project: CHRONIOUS)

*Roberto Rosso (invited talk)*

Toward Multi-Organs Simulations of Immune-Pathogen Interactions

*Filippo Castiglione and Francesco Pappalardo*

An Efficient Combinatorial Approach for Solving the DNA Motif Finding Problem

*Filippo Geraci, Marco Pellegrini and M. Elena Renda*

Using Machine Learning Techniques to Improve the Behaviour of a Medical Decision Support System for Prostate Diseases

*Constantinos Koutsojannis, Eman Nabil, Maria Tsimara and Ioannis Hatzilygeroudis*

## **S2: FROM BUSINESS INTELLIGENCE TO BUSINESS ARTIFICIAL INTELLIGENCE: NEW CHALLENGES FOR INTELLIGENT SYSTEMS**

Monday, November 30<sup>TH</sup>, 15:00 – 16:20 AulaB

Chair: Alberto Bugarín

A Genetic Programming-based Algorithm for Composing Web Services

*Manuel Mucientes, Manuel Lama and Miguel I. Couto*

Linguistic Summaries of Time Series using a Degree of Appropriateness as a Measure of Interestingness

*Janusz Kacprzyk and Anna Wilbik*

Evaluating an Intelligent Business System with a Fuzzy Multi-Criteria Approach

*Sinan Apak and Özalp Vayvay*

Support Vector Machines for Insolvency Prediction of Irish Companies

*Anatoli Nachev*

## **S3: EVOLUTIONARY MULTIOBJECTIVE OPTIMIZATION—DESIGN AND APPLICATIONS (EMODA)**

Monday, November 30<sup>TH</sup>, 16:40 – 18:20 Auditorium

Chair: Ajith Abraham

A Multi-objective Evolutionary Approach to Data Compression in Wireless Sensor Networks

*Francesco Marcelloni and Massimo Vecchio*

Design of Artificial Neural Networks using a Memetic Pareto Evolutionary Algorithm using as Objectives Entropy versus Variation Coefficient

*Juan Carlos Fernández, César Hervás, Francisco José Martínez and Manuel Cruz*

Wavelength Converter Allocation in Optical Networks: An Evolutionary Multi-Objective Optimization Approach

*Diego Pinto Roa, Benjamín Barán and Carlos A. Brizuela*

Solving Multi-Objective Reinforcement Learning Problems by EDA-RL – Acquisition of Various Strategies

*Hisashi Handa*

## **W5: TAGS AND RECOMMENDATIONS IN WEB 2.0 PART 2**

Monday, November 30<sup>TH</sup>, 16:40 – 18:20 Sala Fermi

Chair: Antonina Dattolo

A Parametric Architecture for Tags Clustering in Folksonomic Search Engines

*Nicola Raffaele Di Matteo, Silvio Peroni, Fabio Tamburini and Fabio Vitali*

Evaluation Measures for Ordinal Regression

*Stefano Baccianella, Andrea Esuli and Fabrizio Sebastiani*

Improved Search in Tag-Based Systems

*Ruba Awawdeh and Terry Anderson*

Social and Behavioral Aspects of a Tag-based Recommender System

*Frederico Duraó and Peter Dolog*

A JADE-based ART-inspired Ontology and Protocols for Handling Trust and Reputation

*Javier Carbo and Jose M. Molina*

#### **S4: DESIGNING COMPREHENSIBLE INTELLIGENT SYSTEMS**

Monday, November 30<sup>TH</sup>, 16:40 – 18:20 Sala Pacinotti

Chair: *Ciro Castiello*

An Interpretability-guided Modeling Process for Learning Comprehensible Fuzzy Rule-based Classifiers

*José M. Alonso and Luis Magdalena*

A Study on Interpretability Conditions for Fuzzy Rule-Based Classifiers

*Raffaele Cannone, Ciro Castiello, Corrado Mencar and Anna Maria Fanelli*

Qualitative and Task Analytic Methods to Support Comprehensible Intelligent System Design

*Melanie C. Wright, Noa Segall, Jonathan B. Mark and Jeffrey M. Taekman*

Comprehensible Model of a Quasi-Periodic Signal

*Alberto Alvarez and Gracián Triviño*

The Impact of Pruning BayesFuzzy Rule Set

*I-Hsien Yin, Estevam R. Hruschka Jr and Heloisa de A. Camargo*

#### **W6: INTELLIGENT SYSTEMS DESIGN AND APPLICATIONS IN THE HEALTH DOMAIN PART 2**

Monday, November 30<sup>TH</sup>, 16:40 – 18:20 Sala Galilei

Chairs: *Ovidio Salvetti, Franco Chiarugi*

Translating Cancer Research into Clinical Practice: A Framework for Analyzing and Modeling Cancer from Imaging Data

*Vangelis Sakkalis, Konstantinos Marias, Alexandros Roniotis and Emmanouil Skounakis*

A Decision Support System for Aiding Heart Failure Management

*Sara Colantonio, Massimo Martinelli, Davide Moroni, Ovidio Salvetti, Franco Chiarugi and Dimitra Emmanouilidou*

Knowledge Discovery Approaches for Early Detection of Decompensation Conditions in Heart Failure Patients

*Antonio Candelieri, Domenico Conforti, Angela Sciacqua and Francesco Perticone*

On Intelligent Procedures in Medication for Patient Safety: The PSIP Approach

*Vassilis Koutkias, Katerina Lazou, Vassilis Kilintzis, Régis Beuscart and Nicos Maglaveras*

A Semantic Infrastructure for the Integration of Bioinformatics Services

*Giorgos Zacharioudakis, Lefteris Koumakis, Stelios Sfakianakis and Manolis Tsiknakis*

Accuracy Improvement of SOM-based Data Classification for Hematopoietic Tumor Patients

*Naotake Kamiura, Ayumu Saitoh, Teijiro Isokawa and Nobuyuki Matsui*

#### **S5: COMPUTATIONAL INTELLIGENCE IN BUSINESS MANAGEMENT AND RISK ANALYSIS**

Monday, November 30<sup>TH</sup>, 16:40 – 18:20 AulaB

Chair: *Beatrice Lazzerini*

A Hybrid Fuzzy-Promethee Method for Logistic Service Selection: Design of a Decision Support Tool

*Davide Aloini, Riccardo Dulmin and Valeria Mininno*

Optimizing Allocation in Floor Storage Systems for the Shoe Industry by Constraint Logic Programming

*Antonella Meneghetti*

Dynamic Representation of a Situation: a Step of a Decision Support Process

*Fahem Kebair and Frédéric Serin*

Method to Select Effective Risk Mitigation Controls Using Fuzzy Outranking

*Kiyoshi Nagata, Michio Amagasa, Yutaka Kigawa and Dongmei Cui*

The Fuzzy Probabilistic Weighted Averaging Operator and its Application in Decision Making

*José M. Merigó*

## TUESDAY – DECEMBER 1<sup>ST</sup>

### **S6: HYBRID METAHEURISTICS AND THEIR APPLICATIONS**

Tuesday, December 1<sup>ST</sup>, 10:00 – 11:20 Auditorium

Chair: Pedro Isasi

Improved Accuracy Rates of a Prototype Based Classifier Using Evolutionary Computation  
*Gustavo Recio, Yago Saez and Pedro Isasi*

Hybrid and Evolutionary Agent-Based Social Simulations Using the PAX Framework  
*Fernando B. de Lima Neto, Marcelo Pita and Hugo Serrano B. Filho*

Implementing Metaheuristic Optimization Algorithms with JEColi  
*Pedro Evangelista, Paulo Maia and Miguel Rocha*

Hybrid Evolutionary Algorithms for Sensor Placement on a 3D Terrain  
*Haluk Rahmi Topcuoglu, Murat Ermis and Mesut Sifyan*

### **W7: INTELLIGENT SYSTEMS FOR DATA REDUCTION PART 1**

Tuesday, December 1<sup>ST</sup>, 10:00 – 11:20 Sala Fermi

Chair: José M. Benítez

A First Approach to Nearest Hyperrectangle Selection by Evolutionary Algorithms  
*Salvador García, Joaquín Derrac, Julián Luengo and Francisco Herrera*

Addressing Data-Complexity for Imbalanced Data-sets: A Preliminary Study on the Use of Preprocessing for C4.5  
*Julián Luengo, Alberto Fernández, Salvador García and Francisco Herrera*

Context-based Adaptive Filtering of Interest Points in Image Retrieval  
*Giang P. Nguyen and Hans Jørgen Andersen*

Clustering-based Feature Selection in Semi-supervised Problems  
*Ianisse Quinzàn Suarez, José Martínez Sotoca and Filiberto Pla*

### **W8: INTELLIGENT SIGNAL AND IMAGE ANALYSIS IN REMOTE SENSING PART 1**

Tuesday, December 1<sup>ST</sup>, 10:00 – 11:20 Sala Pacinotti

Chair: Marco Diani

Semi-Supervised Kernel Target Detection in Hyperspectral Images  
*Luca Capobianco, Andrea Garzelli and Gustavo Camps-Valls*

A Contextual Multiscale Unsupervised Method for Change Detection with Multitemporal Remote-Sensing Images  
*Gabriele Moser, Elena Angiati and Sebastiano B. Serpico*

Texture-based Segmentation of Very High Resolution Remote-Sensing Images  
*Raffaele Gaetano, Giuseppe Scarpa and Giovanni Poggi*

Towards Interpretable General Type-2 Fuzzy Classifiers  
*Luís A. Lucas, Tania M. Centeno and Myriam R. Delgado*

### **W9: HUMAN MONITORING AND MACHINE LEARNING STRATEGIES PART 1**

Tuesday, December 1<sup>ST</sup>, 10:00 – 11:20 Sala Galilei

Chair: Giovanni Pioggia

Applications of Soft Computing to Medical Problems  
*Ahmet Yardimci*

An Ontology-driven Multisensorial Platform to Enable Unobtrusive Human Monitoring and Independent Living  
*Giovanni Pioggia, Giulia Ricci, Silvio Bonfiglio, Angelos Bekiaris, Gabriele Siciliano and Danilo De Rossi*

Improved Learning of Bayesian Networks in Biomedicine  
*Antonella Meloni, Andrea Ripoli, Vincenzo Positano and Luigi Landini*

Extraction and Synchronization of BOLD Spontaneous Oscillations using Singular Spectrum Analysis

*Danilo Menicucci, Angelo Gemignani, Andrea Piarulli, Remo Bedini, Claudio Gentili, Giacomo Handjaras, Sabrina Danti, Mario Guazzelli, Marco Laurino, Paolo Piaggi and Alberto Landi*

## **INNOVATIVE NETWORKING AND COMMUNICATION TECHNIQUES**

Tuesday, December 1<sup>ST</sup>, 10:00 – 11:20 AulaB

Chair: Ajith Abraham

Efficient Scheduling Algorithms on Bandwidth Reservation Service of Internet using Metaheuristics

*Tomoyuki Hiroyasu, Kozo Kawasaki, Michihiro Koibuchi, Shigeo Urushidani, Mitsunori Miki and Masato Yoshimi*

Solving a Realistic Location Area Problem Using SUMATRA Networks with the Scatter Search Algorithm

*Sónia M. Almeida-Luz, Miguel A. Vega-Rodríguez, Juan A. Gómez-Pulido and Juan M. Sánchez-Pérez*

Danger Theory and Multi-agents Applied for Addressing the Deny of Service Detection Problem in IEEE 802.11 Networks

*Moisés Danziger, Marcelo Lacerda and Fernando B. de Lima Neto*

Design and Implementation of Distributed Intelligent Firewall based on IPv6

*Qian Ma, Yingxu Lai and Guangzhi Jiang*

## **INTELLIGENT CONTROL AND AUTOMATION PART 1**

Tuesday, December 1<sup>ST</sup>, 11:30 – 12:50 Auditorium

Chair: Leonardo M. Reyneri

Agent-oriented Intelligent Control Strategies for the Nano-Satellite Autonomous Thermal System

*Liu Jia, Li Yunze, Wang Yuying and Wang Jun*

Intelligent Lighting Control User Interface through Design of Illuminance Distribution

*Tomoyuki Hiroyasu, Akiyuki Nakamura, Sho Shinohara, Masato Yoshimi, Mitsunori Miki and Hisatake Yokouchi*

Adaptive Paralleled DMC-PID Controller Design on System with Uncertainties

*Ruihua Wei and Lihong Xu*

An Efficient Solver for Scheduling Problems on a Class of Discrete Event Systems Using CELL/B.E. Processor

*Hiroyuki Goto and Atsushi Kawaminami*

## **W7: INTELLIGENT SYSTEMS FOR DATA REDUCTION PART 2**

Tuesday, December 1<sup>ST</sup>, 11:30 – 12:50 Sala Fermi

Chair: José Salvador García

Empirical Study of Individual Feature Evaluators and Cutting Criteria for Feature Selection in Classification

*Antonio Arauzo-Azofra, José L. Aznarte M. and José M. Benítez*

Agglomeration and Elimination of Terms for Dimensionality Reduction

*Patrick Marques Ciarelli and Elias Oliveira*

Automatically Generated Linguistic Summaries of Energy Consumption Data

*Albert van der Heide and Gracián Triviño*

Measures for Unsupervised Fuzzy-Rough Feature Selection

*Neil Mac Parthaláin and Richard Jensen*



## **W8: INTELLIGENT SIGNAL AND IMAGE ANALYSIS IN REMOTE SENSING PART 2**

Tuesday, December 1<sup>ST</sup>, 11:30 – 12:50 Sala Pacinotti

Chair: Giovanni Corsini

On the Effects of Synthetic-Aperture Length on SAS Seabed Segmentation  
*David P. Williams and Johannes Groen*

Fully Unsupervised Learning of Gaussian Mixtures for Anomaly Detection in Hyperspectral Imagery  
*Tiziana Veracini, Stefania Matteoli, Marco Diani and Giovanni Corsini*

Performance Assessment of a Mathematical Morphology Ship Detection Algorithm for SAR Images through Comparison with AIS Data  
*Raffaele Grasso, Sergio Mirra, Alberto Baldacci, Jochen Horstmann, Matthew Coffin, Melanie Jarvis*

Intelligent Cooperative Tracking in Multi-Camera Systems  
*Yan Lu and Shahram Payandeh*

## **W9: HUMAN MONITORING AND MACHINE LEARNING STRATEGIES PART 2**

Tuesday, December 1<sup>ST</sup>, 11:30 – 12:50 Sala Galilei

Chair: Alberto Landi

Backpropagation-Based Non Linear PCA for Biomedical Applications  
*Alberto Landi, Paolo Piaggi and Giovanni Pioggia*

Cluster Analytic Detection of Disgust-Arousal  
*Masood Mehmood Khan*

Automatic Detection of Arrhythmias Using Wavelets and Self-Organized Artificial Neural Networks  
*Sérgio R. Rogal Jr, Alfredo Beckert Neto, Marcus Vinícius Mazega Figueredo, Emerson Cabrera Paraiso and Celso A. Alves Kaestner*

ENMET: Endothelial Cell Metabolism Mathematical Model  
*Gianni Orsi, Carmelo De Maria, Federico Vozzi, Mariangela Guzzardi, Arti Ahluwalia and Giovanni Vozzi*

## **INTELLIGENT INTERNET MODELING**

Tuesday, December 1<sup>ST</sup>, 11:30 – 12:50 AulaB

Chair: Umberto Straccia

Extending Datatype Restrictions in Fuzzy Description Logics  
*Fernando Bobillo and Umberto Straccia*

A Combined Query Expansion Technique for Retrieving Opinions from Blogs  
*Saeedeh Momtazi, Stefan Kazalski and Dietrich Klakow*

Novel IPCA-Based Classifiers and Their Application to Spam Filtering  
*Alessandro Rozza, Gabriele Lombardi and Elena Casiraghi*

A Fuzzy Decision System Using Shoppers' Preferences for Recommendations in E-Commerce Applications  
*Zhengping Wu and Hao Wu*

Evolutionary Shallow Parsing  
*John Atkinson and Juan Matamala*

## **INTELLIGENT CONTROL AND AUTOMATION PART 2**

Tuesday, December 1<sup>ST</sup>, 15:00 – 16:20 Auditorium

Chair: Antonio Peregrin Rubio

Design Based on a Shared Lookup-Table for an Obstacle Avoidance Fuzzy Controller for Mobile Robots  
*Jinwook Kim, Young-Gu Kim, Young-Duk Kim, Won-Seok Kang and Jinung An*

Acquisition of Image Feature on Collision for Robot Motion Generation

*Taichi Okamoto, Yuichi Kobayashi and Masaki Onishi*

Using Fuzzy Techniques for Bounding the Tolerance of GPS-based Speed and Distance Measurements in Taximeter Verification

*Adolfo Otero, José Otero and Luciano Sánchez*

Identification of Petri Net Models based on an Asymptotic Approach

*Maria Elena Meda Campaña, Francisco Javier Lopez-Lopez, Cuauhtemoc Lopez-Martin and Arturo Chavoya*

### **W10: CONSENSUS AND DECISION MAKING PART 1**

Tuesday, December 1<sup>ST</sup>, 15:00 – 16:20 Sala Fermi

Chair: Enrique Herrera-Viedma

Consensus with Linguistic Preferences in Web 2.0 Communities

*Sergio Alonso, Ignacio J. Pérez, Enrique Herrera-Viedma and Francisco Javier Cabrerizo*

Optimizing the Method for Building an Extended Linguistic Hierarchy

*Macarena Espinilla, Rosa M Rodríguez, Luis Martínez, F. Mata and Jun Liu*

A Preliminary Study of the Effects of Different Aggregation Operators on Consensus Processes

*Francisco Mata, Luis Martínez and Juan Carlos Martínez*

Action Rules in Consensus Reaching Process Support

*Janusz Kacprzyk, Slawomir Zadrozny and Zbigniew W. Raś*

### **S7: EDUCATION AND LEARNING MODELS, APPLICATIONS AND SOLUTIONS**

Tuesday, December 1<sup>ST</sup>, 15:00 – 16:20 Sala Pacinotti

Chairs: Silvio Bortoleto, Katia Bortoleto

Cognition and Affectivity: its Influences in Teacher-Student Relation and in the Teaching-Learning Process

*Ana Leticia Galastri*

Intelligent Reporting System with e-Training Capabilities

*Maria Murri, Marco Lupinelli and Luca Onofri*

Analyzing Online Asynchronous Discussion Using Content and Social Network Analysis

*Erlin, Norazah Yusof and Azizah Abdul Rahman*

Improving Academic Performance Prediction by Dealing with Class Imbalance

*Nguyen Thai-Nghe, Andre Busche and Lars Schmidt-Thieme*

### **W9: HUMAN MONITORING AND MACHINE LEARNING STRATEGIES PART 3**

Tuesday, December 1<sup>ST</sup>, 15:00 – 16:20 Sala Galilei

Chair: Giovanni Pioggia

An FPGA based Arrhythmia Recognition System for Wearable Applications

*Antonino Armato, Elena Nardini, Antonio Lanatà, Gaetano Valenza, Carlo Mancuso, Enzo Pasquale Scilingo and Danilo De Rossi*

Postponed Updates for Temporal-Difference Reinforcement Learning

*Harm van Seijen and Shimon Whiteson*

Sensor Fusion-oriented Fall Detection for Assistive Technologies Applications

*Stefano Cagnoni, Guido Matrella, Monica Mordonini, Federico Sassi, and Luca Ascari*

Event Related Biometrics: Towards an Unobtrusive Sensing Seat System for Continuous Human Authentication

*Marcello Ferro, Giovanni Pioggia, Alessandro Tognetti, Gabriele Dalle Mura and Danilo De Rossi*

## **W11: PROVISIONING OF SMART SERVICES IN ONTOLOGY-BASED SYSTEMS PART 1**

Tuesday, December 1<sup>ST</sup>, 15:00 – 16:20 AulaB

Chair: Pierluigi Ritrovato

Using Ontologies to Achieve Semantic Interoperability in the Web: an Approach based on the Semantic Triangle Model

*Angelo Chianese, Annarita Fasolino, Vincenzo Moscato and Porfirio Tramontana*

Ontology-based System for Enterprise 2.0

*Giuseppina Rita Mangione, Sergio Miranda, Stefano Paolozzi, Anna Pierri, Pierluigi Ritrovato and Saverio Salerno*

A Business Intelligence Process to Support Information Retrieval in an Ontology-Based Environment

*Filippo Sciarrone, Paolo Starace and Tommaso Federici*

Combining DHTs and SONs for Semantic-Based Service Discovery

*Giuseppe Pirrò, Paolo Missier, Paolo Trunfio, Domenico Talia, Gabriele Falace and Carole Goble*

## **INTELLIGENT CONTROL AND AUTOMATION PART 3**

Tuesday, December 1<sup>ST</sup>, 16:40 – 18:20 Auditorium

Chair: Alberto Landi

Transferring the Progress Control Policy for a Class of Discrete Event Systems

*Hiroyuki Goto and Takakazu Tsubokawa*

AAFES: An Intelligent Fuzzy Expert System for Realization of Adaptive Autonomy Concept

*Alireza Fereidunian, Mohammad-Ali Zamani, Caro Lucas, Hamid Lesani and Matti Lehtonen*

The Bi-objective Problem of Distribution of Oil Products by Pipeline Networks Approached by a Particle Swarm Optimization Algorithm

*Thatiana C. N. Souza, Elizabeth F. G. Goldberg and Marco C. Goldberg*

Detection of Similarity of Trajectory of Center of Gravity in Operating Unicycle Uses Motion Capture System

*Takahiro Kawasaki, Teruyosho Sadahiro, Masami Iwase and Shoshiro Hatakeyama*

Observer Design using T-S Fuzzy Systems for Pressure Estimation in Hydrostatic Transmissions

*Horst Schulte and Patrick Gerland*

## **W10: CONSENSUS AND DECISION MAKING PART 2**

Tuesday, December 1<sup>ST</sup>, 16:40 – 18:20 Sala Fermi

Chair: José Luis García-Lapresta

On the Use of the Uncertain Induced OWA Operator and the Uncertain Weighted Average and its Application in Tourism Management

*José M. Merigo, Anna M. Gil-Lafuente and Onofre Martorell*

Measuring Social Welfare through Location and Consensus Measures

*José Luis García-Lapresta and Ricardo Alberto Marques Pereira*

Connection among Some Characterizations of Complete Fuzzy Preorders

*Susana Díaz, Davide Martinetti, Ignacio Montes and Susana Montes*

Definition of a Consensual Drug Selection Process in Hospital Universitario Virgen de la Victoria

*Jesus M. Doña, Isabel Moya and Jesus López*

Strategic Assessment of Business

*Jesus M. Doña, Jose I. Peláez and Luis G. Vargas*

## **S8: INTELLIGENT E-LEARNING SYSTEMS**

Tuesday, December 1<sup>ST</sup>, 16:40 – 18:20 Sala Pacinotti

Chairs: Ajith Abraham, Norazah Yusof

Developing Student Model using Kohonen Network in Adaptive Hypermedia Learning System

*Bariah Yusob, Siti Mariyam Hj Shamsuddin and Nor Bahiah Ahmad*

OCEAN Project. A Prototype of AIWBES based on Fuzzy Ontology

*Francesco Colleoni, Silvia Calegari, Davide Ciucci and Matteo Dominoni*

LS-LAB: a Framework for Comparing Curriculum Sequencing Algorithms

*Carla Limongelli, Filippo Sciarrone and Giulia Vaste*

Concept-based Classification for Adaptive Course Sequencing Using Artificial Neural Network

*Norsham Idris, Norazah Yusof and Puteh Saad*

A Metrics Suite for Measuring Reusability of Learning Objects

*Siti Fadzilah Mat Noor, Norazah Yusof and Siti Zaiton Mohd Hashim*

## **S9: INTELLIGENT SYSTEMS FOR INDUSTRIAL PROCESSES**

Tuesday, December 1<sup>ST</sup>, 16:40 – 18:20 Sala Galilei

Chairs: Leonardo Maria Reyneri, Valentina Colla

Tutorial: About Industrial Acceptance of Intelligent Systems

*Leonardo M. Reyneri*

Automatic Diagnosis of Defects of Rolling Element Bearings based on Computational Intelligence Techniques

*Marco Cococcioni, Beatrice Lazzerini and Sara Lioba Volpi*

GA-Based Solutions Comparison for Storage Strategies Optimization for an Automated Warehouse

*Valentina Colla, Gianluca Nastasi, Nicola Matarese and Leonardo M. Reyneri*

Profit Forecasting Using Support Vector Regression for Consulting Engineering Firms

*Victor Yepes, Eugenio Pellicer and Francesc J. Ferri*

On-Line Neural Network Stator Resistance Estimation in Direct Torque Controlled Induction Motor Drive

*Yassine Sayouti, Ahmed Abbou, Mohammed Akherraz and Hassane Mahmoudi*

## **W11: PROVISIONING OF SMART SERVICES IN ONTOLOGY-BASED SYSTEMS PART 2**

Tuesday, December 1<sup>ST</sup>, 16:40 – 18:20 AulaB

Chair: Filippo Sciarrone

Product Configurator: an Ontological Approach

*Francesco Colace, Massimo De Santo and Paolo Napoletano*

WikiArt: an Ontology-based Information Retrieval System for Arts

*Roberto Pirrone, Vincenzo Cannella, Orazio Gambino, Arianna Pipitone and Giuseppe Russo*

An Ontology-based Method for Integrating Heterogeneous Itembanks

*Chun-Wei Tsai, Shih-Pang Tseng, Yu-Sheng Yang, Ming-Chao Chiang and Chu-Sing Yang*

Higher Education in the Twenty-first Century. The Chance of Adaptive Learning Environments

*Antonella Poce*

A Probabilistic Method for Text Analysis

*Fabio Clarizia, Massimo De Santo and Paolo Napoletano*

Ontology Merging and Database Schema Integration: An Approach to Identify Semantic Similarity and Resolve Schematic Heterogeneity in Interoperable GIS Application

*Nanna Suryana, Shahrin Sahib, Ridwan Habibi, Norayu Abdul Ghani, Zahriah Othman and Ahmad Tajuddin Samsudin*

## WEDNESDAY – DECEMBER 2<sup>ND</sup>

### INTELLIGENT DATA MINING

Wednesday, December 2<sup>ND</sup>, 10:40 – 12:40 Auditorium

Chair: Teresa B. Ludermir

An Experimental Study on Unsupervised Clustering-based Feature Selection Methods  
*Thiago Ferreira Covões and Eduardo Raul Hruschka*

A Penalty Function for Computing Orthogonal Non-Negative Matrix Factorizations  
*Nicoletta Del Buono*

Comparison Among Methods for k Estimation in k-means  
*Murilo C. Naldi, André Fontana and Ricardo J.G.B. Campello*

A Possibilistic Approach for Building Statistical Language Models  
*Saeedeh Momtazi and Hossein Sameti*

A Robust Prediction Method for Interval Symbolic Data  
*Roberta A.A. Fagundes, Renata M.C.R. de Souza and Francisco José A. Cysneiros*

Optimizing Linear and Quadratic Transformations for Classification Tasks  
*José M. Valls and Ricardo Aler*

### W12: COMPUTATIONAL INTELLIGENCE FOR PERSONALIZATION IN WEB CONTENT AND SERVICE DELIVERY

Wednesday, December 2<sup>ND</sup>, 10:40 – 12:40 Sala Fermi

Chairs: Giovanna Castellano, Maria Alessandra Torsello

Modeling User Preferences through Adaptive Fuzzy Profiles  
*Corrado Mencar, Maria Alessandra Torsello, Danilo Dell'Agnello, Giovanna Castellano and  
Ciro Castiello*

Situation-aware Mobile Service Recommendation with Fuzzy Logic and Semantic Web  
*Alessandro Ciaramella, Mario Giovanni C. A. Cimino, Beatrice Lazzarini and Francesco  
Marcelloni*

An Heuristic Approach to Page Recommendation in Web Usage Mining  
*Antonio Maratea and Alfredo Petrosino*

Recommendations toward Serendipitous Diversions  
*Leo Iaquina, Marco de Gemmis, Pasquale Lops and Giovanni Semeraro*

A Preliminary Experience in Optimizing the Layout of Web Pages by Genetic Algorithms to  
Fit Mobile Devices  
*Luigi Troiano, Gennaro Cirillo, Roberto Armenise and Cosimo Birtolo*

A Recommendation Technique for Cultural Heritage Hypermedial Objects  
*Pierpaolo Di Bitonto, Teresa Roselli and Veronica Rossano*

### W13: EVOLUTIONARY ALGORITHMS AND OTHER METAHEURISTICS FOR CONTINUOUS OPTIMIZATION PROBLEMS - A SCALABILITY TEST

Wednesday, December 2<sup>ND</sup>, 10:40 – 12:40 Sala Pacinotti

Chairs: Francisco Herrera, Manuel Lozano

Memetic Algorithm with Local Search Chaining for Continuous Optimization Problems: A  
Scalability Test  
*Daniel Molina, Manuel Lozano and Francisco Herrera*

Continuous Variable Neighbourhood Search Algorithm Based on Evolutionary Metaheuristic  
Components: A Scalability Test  
*Carlos García-Martínez and Manuel Lozano*

A Memetic Differential Evolution Algorithm for Continuous Optimization  
*Santiago Muelas, Antonio LaTorre and José María Peña*

An Adaptive Memory Procedure for Continuous Optimization

*Abraham Duarte, Rafael Marti and Fred Glover*

A Scalability Test for Accelerated DE Using Generalized Opposition-based Learning  
*Hui Wang, Zhijian Wu, Shahryar Rahnamayan and Lishan Kang*

Unidimensional Search for Solving Continuous High-dimensional Optimization Problems  
*Vincent Gardeux, Rachid Chelouah, Patrick Siarry and Fred Glover*

#### **W14: EDUCATIONAL DATA MINING**

Wednesday, December 2<sup>ND</sup>, 10:40 – 12:40 Sala Galilei

Chair: Sebastián Ventura

Mining Models for Failing Behaviors

*Cláudia Antunes*

Checking the Reliability of GeSES: Method for Detecting Symptoms of Low Performance

*Javier Bravo, Estefania Martin, Alvaro Ortigosa and Rosa M. Carro*

From Local Patterns to Global Models: Towards Domain Driven Educational Process Mining

*Nikola Trčka and Mykola Pechenizkiy*

Predicting Academic Achievement Using Multiple Instance Genetic Programming

*Amelia Zafra, Cristóbal Romero and Sebastián Ventura*

Discovering Learning Objects Usability Characteristics

*Alfredo Zapata, Victor H. Menendez and Manuel E. Prieto*

Time Analysis of Forum Evolution as Support Tool for E-Moderating

*Carlo Alberto Bentivoglio*

#### **W15: DATA MINING AND ONTOLOGIES MODELS, APPLICATIONS AND SOLUTIONS PART 1**

Wednesday, December 2<sup>ND</sup>, 10:40 – 12:40 AulaB

Chair: Silvio Bortoleto

MAHATMA: A Genetic Programming-Based Tool for Protein Classification

*Denise F. Tsunoda, Alex A. Freitas and Heitor S. Lopes*

A Strategy for Biodiversity Knowledge Acquisition based on Domain Ontology

*Andréa Corrêa Flôres Albuquerque, José Laurindo Campos dos Santos and José Francisco de Magalhães Netto*

A Fast Algorithm for Mining Rare Itemsets

*Luigi Troiano, Giacomo Scibelli and Cosimo Birtolo*

Developing an Implementation through a Modeling of the Database for Cardiovascular Monitoring

*Hugo Bulegon, Silvio Bortoleto and Angelmar Constantino Roman*

An FCD Information Processing Model under Traffic Signal Control

*Weifeng Lv, Leishi Xu, Tongyu Zhu, Dongdong Wu and Bowen Du*

Designing a Conceptual Model for Herbal Research Domain using Ontology Technique

*Azlida Mamat and Azizah Abdul Rahman*

#### **INTELLIGENT KNOWLEDGE MANAGEMENT**

Wednesday, December 2<sup>ND</sup>, 13:50 – 15:30 Auditorium

Chair: Vincenzo Loia

Some Basic Results of Fuzzy Research in the ISI Web of Knowledge

*José María Merigó and Ana M. Gil-Lafuente*

On the Role of Dialogue and Argumentation in Collaborative Problem Solving

*Nadim Obeid and Asma Moubaidin*

Inductive Query Answering and Concept Retrieval Exploiting Local Models

*Claudia d'Amato, Nicola Fanizzi, Floriana Esposito and Thomas Lukasiewicz*

Order Independent Incremental Evolving Fuzzy Grammar Fragment Learner  
*Nurfadhlina Mohd Sharef, Trevor Martin and Yun Shen*

Automatic Labeling Of Topics  
*Davide Magatti, Silvia Calegari, Davide Ciucci and Fabio Stella*

### **S10: INTELLIGENT SYSTEMS AND DATA MINING TECHNIQUES FOR BIOINFORMATICS**

Wednesday, December 2<sup>ND</sup>, 13:50 – 15:30 Sala Fermi

Chair: Raúl Giráldez

Optimization of Multi-classifiers for Computational Biology: Application to the Gene Finding Problem

*Rocio Romero-Zaliz, Coral del Val and Igor Zwir*

An Overlapping Control-Biclustering Algorithm from Gene Expression Data

*Juan A. Nepomuceno, Alicia Troncoso and Jesús S. Aguilar-Ruiz*

Similarity Analysis of Protein Binding Sites: A Generalization of the Maximum Common Subgraph Measure Based on Quasi-Clique Detection

*Imen Boukhris, Zied Elouedi, Thomas Fober, Marco Mernberger and Eyke Hüllermeier*

Efficient Construction of Multiple Geometrical Alignments for the Comparison of Protein Binding Sites

*Thomas Fober, Gerhard Klebe and Eyke Huellermeier*

Optimizing Multiple Sequence Alignment by Improving Mutation Operators of a Genetic Algorithm

*Fernando José Mateus da Silva, Juan Manuel Sánchez Pérez, Juan Antonio Gómez Pulido and Miguel A. Vega Rodríguez.*

### **W16: NEURAL NETWORKS AND NEURO-FUZZY SYSTEMS PART 1**

Wednesday, December 2<sup>ND</sup>, 13:50 – 15:30 Sala Pacinotti

Chair: Luis Javier Herrera

Risk Factor Identification and Classification of Macrosomic Newborns by Neural Networks

*Alberto Guillen, Andrea Martinez-Trujillo, Gines Rubio, Ignacio Rojas, Hector Pomares and Luis Javier Herrera*

A Data Mining Approach Based on a Local-Global Fuzzy Modelling for Prediction of Color Change after Tooth Bleaching using Vita Classical Shades

*Luis J. Herrera, María del Mar Pérez, Janiley Santana, Rosa Pulgar, Jesús González, Héctor Pomares and Ignacio Rojas*

Trajectory Tracking of Complex Dynamical Network for Recurrent Neural Network Via Control V-Stability

*José P. Pérez, Joel Pérez, Jorge A. González*

General Purpose Input Variables Extraction: A Genetic Algorithm based Procedure GIVE A GAP

*Silvia Cateni, Valentina Colla and Marco Vannucci*

A Fuzzy Wavelet Neural Network Model for System Identification

*Sevcan Yilmaz and Yusuf Oysal*

### **WORKSHOP W17: SOFT COMPUTING AND IMAGE PROCESSING PART 1**

Wednesday, December 2<sup>ND</sup>, 13:50 – 15:30 Sala Galilei

Chair: Humberto Bustince

Assessment of Asymmetry in Pyramidal Tract by Using Fiber Tracking

*Fatima Tensaouti, Jean Albert Lotterie, Perrine Clarisse and Isabelle Berry*

A A-IFSs Based Image Segmentation Methodology for Gait Analysis

*Pedro Couto, Vitor Filipe, Pedro Melo-Pinto, Humberto Bustince and Edurne Barrenechea*

A 3D Lifting Based Method Augmented by Motion Compensation for Video Coding

*Sedat Telceken, Sukru Gorgulu and Omer N. Gerek*

A Structural Approach to Image Segmentation  
*Daniel Gómez, Javier Montero and Javier Yáñez*

Noisy Image Edge Detection Using an Uninorm Fuzzy Morphological Gradient  
*Manuel González-Hidalgo, Arnau Mir Torres and Joan Torrens Sastre*

## **W15: DATA MINING AND ONTOLOGIES MODELS, APPLICATIONS AND SOLUTIONS PART 2**

Wednesday, December 2<sup>ND</sup>, 13:50 – 15:30 AulaB

Chair: Katia Bortoleto

Potential Data Mining Classification Techniques for Academic Talent Forecasting  
*Hamidah Jantan, Abdul Razak Hamdan and Zulaiha Ali Othman*

Equalizing the Structures of Web Communities in Ontology Development Tools  
*Francesca Arcelli Fontana, Raffaele Ferrante Formato and Remo Pareschi*

Searching Common Pattern in Agents Behaviors with Usage of FCA  
*Petr Gajdoš and Michal Radecký*

Vertical Mining of Frequent Patterns Using Diffset Groups  
*Laila A. Abd El-Megid, Mohamed E. El-Sharkawi, Laila M. El-Fangary and Yehia K. Helmy*

## **HYBRID SYSTEMS**

Wednesday, December 2<sup>ND</sup>, 15:50 – 17:50 Auditorium

Chair: Eduardo Raul Hruschka

Integration of Graphical Modeling with Fuzzy Clustering for Casual Relationship of Electric Load Forecasting  
*Hiroyuki Mori and Wenjun Jiang*

Testing for Serial Independence of the Residuals in the Framework of Fuzzy Rule-based Time Series Modeling  
*José Luis Aznarte M., Antonio Arauzo-Azofra and José M. Benítez-Sánchez*

Efficient Computation Methods for the Kleene Star in Max-Plus Linear Systems  
*Hiroyuki Goto and Munenori Kasahara*

Using Smart Sampling to Discover Promising Regions and Increase the Efficiency of Differential Evolution  
*Vinícius Veloso de Melo and Alexandre C.B. Delbem*

EACImpute: An Evolutionary Algorithm for Clustering-Based Imputation  
*Jonathan de Andrade Silva and Eduardo Hruschka*

## **INTELLIGENT IMAGE AND SIGNAL PROCESSING**

Wednesday, December 2<sup>ND</sup>, 15:50 – 17:50 Sala Fermi

Chair: Beatrice Lazznerini

Intracellular Volume Registration  
*Shin Yoshizawa, Satoko Takemoto, Miwa Takahashi, Makoto Muroi, Sayaka Kazami, Hiromi Miyoshi and Hideo Yokota*

Algorithm Selection for Intracellular Image Segmentation based on Region Similarity  
*Satoko Takemoto and Hideo Yokota*

Effective Feature Selection for Mars McMurdo Terrain Image Classification  
*Changjing Shang, Dave Barnes and Qiang Shen*

View-Independent Face Recognition with Biological Features based on Mixture of Experts  
*Alireza Hajiany, Nina Taheri Makhsoos and Reza Ebrahimpour*

Study on Mapping of Basic Elements in the Chinese Character Intelligent Formation without Character Library System  
*Mingyou Liu, Wenzhi Liao and Youguo Pi*



## **W16: NEURAL NETWORKS AND NEURO-FUZZY SYSTEMS PART 2**

Wednesday, December 2<sup>ND</sup>, 15:50 – 17:50 Sala Pacinotti

Chair: Ignacio Rojas

FPGA-Based Recurrent Wavelet Neural Network Control System for Linear Ultrasonic Motor  
*Ying-Chih Hung and Faa-Jeng Lin*

Fitting Multiple Alpha Peaks using Neural Network Techniques  
*Javier Miranda, Antonio Baeza, Javier Guillén and Rosa M. Pérez Utrero*

Computer Vision-Based Eyelid Closure Detection: a Comparison of MLP and SVM classifiers  
*David González-Ortega, Francisco Javier Díaz-Pernas, Míriam Antón-Rodríguez, Mario Martínez-Zarzuela, José Fernando Díez-Higuera and Daniel Boto-Giralda*

A Method to Point Out Anomalous Input-Output Patterns in a Database for Training Neuro-Fuzzy System with a Supervised Learning Rule  
*Valentina Colla, Nicola Matarese and Leonardo M. Reyneri*

Acquisition of Body and Object Representation Based on Motion Learning and Planning Framework  
*Takahiro Asamizu and Yuichi Kobayashi*

## **WORKSHOP W17: SOFT COMPUTING AND IMAGE PROCESSING PART 2**

Wednesday, December 2<sup>ND</sup>, 15:50 – 17:50 Sala Galilei

Chair: Pedro Melo-Pinto

On the Use of t-Conorms in the Gravity-based Approach to Edge Detection  
*Carlos Lopez-Molina, Humberto Bustince, Mikel Galar, Javier Fernandez and Bernard De Baets*

Ignorance-based fuzzy clustering algorithm  
*Aranzazu Jurio, Miguel Pagola, Daniel Paternain, Edurne Barrenechea, Jose Antonio Sanz and Humberto Bustince*

THREECOND: An Automated and Unsupervised Three Colour Fuzzy-Based Algorithm for Detecting Nuclei in Cervical Pap Smear Images  
*Fabio Vaschetto, Eduard Montseny, Pilar Sobrerilla and Enrique Lerma*

Fusion of IKONOS Remote Sensing Filtered Images using Shadow Information to Improve the Rate of Building Extraction in Urban Images  
*Mohammad Jalal Rastegar Fatemi, Seyed Mostafa Mirhassani and Bardia Yousefi*

Introducing Type-2 Fuzzy Sets for Image Texture Modelling  
*Jesus Chamorro-Martínez, Pedro Martínez-Jiménez and Daniel Sánchez*

## **S11: BIOINSPIRED AND EVOLUTIONARY COMPUTATION BASED DATA MINING TECHNIQUES**

Wednesday, December 2<sup>ND</sup>, 15:50 – 17:50 AulaB

Chair: José M. Puerta

Structural Learning of Bayesian Networks by using Variable Neighbourhood Search based on the Space of Orderings  
*Juan Ignacio Alonso-Barba, Luis delaOssa and Jose M. Puerta*

Binary Representation in Gene Expression Programming: Towards a Better Scalability  
*Jose G. Moreno-Torres, Xavier Llorà and David E. Goldberg*

E-tsRBF: Preliminary Results on the Simultaneous Determination of Time-lags and Parameters of Radial Basis Function Neural Networks for Time Series Forecasting  
*Elisabet Parras-Gutierrez, Victor Rivas and Maria José del Jesus*

Grammatical Concept Representation for Randomised Optimisation Algorithms in Relational Learning  
*Petr Buryan, Jiří Kubalik and Katsumi Inoue*

Fast Evolutionary Algorithms for Relational Clustering  
*Danilo Horta and Ricardo J.G.B. Campello*