

# ISDA'10 PROGRAM

MONDAY – NOVEMBER 29<sup>TH</sup>

## **S1: INTELLIGENT SYSTEMS FOR INDUSTRIAL PROCESSES**

Monday, 29<sup>TH</sup> November, 10:30 – 12:30 Room A

Chair: Valentina Colla

GADF - Genetic Algorithm for Distribution Fitting

*Gianluca Nastasi, Valentina Colla, Nicola Matarese*

Image Reconstruction of a Metal Fill Industrial Process Using Genetic Programming

*Alaa Al-Afeef, Alaa F. Sheta, Adnan Al-Rabea*

Optimal Product Line Design Workflows Using a Service Oriented Architecture

*Stelios Tsafarakis, Pavlos Delias, Nikolaos Matsatsinis*

An Event Driven Software Framework for Enabling Enterprise Integration and Control of Enterprise Processes

*Sachin Karadgi, Daniel Metz, Manfred Grauer, Walter Schäfer*

Adaptive Resource Allocation for Preemptable Jobs in Cloud Systems

*Jiayin Li, Meikang Qiu, Jianwei Niu, Yu Chen, Zhong Ming*

Street Navigation Using Visual Information on Mobile Phones

*Phuong Giang Nguyen, Hans Jørgen Andersen, Carsten Høilund*

## **INTELLIGENT CLUSTERING SYSTEMS**

Monday, 29<sup>TH</sup> November, 10:30 – 12:30 Room B

Chair: Janusz Kacprzyk

A Relational Fuzzy C-Means Clustering Algorithm Based on Multiple Dissimilarity Matrices

*Francisco de A. T. De Carvalho, Yves Lechevallier, Filipe M. de Melo*

Proximity Fuzzy Clustering and Its Application to Time Series Clustering and Prediction

*Daniel Graves, Witold Pedrycz*

A Three-Part Input-Output Clustering-Based Approach to Fuzzy System Identification

*Shin-Jye Lee*

An Interactive Genetic Algorithm with C-Means Clustering for the Unequal Area Facility Layout Problem

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

Triangular Kernel Nearest Neighbor Based Clustering for Pattern Extraction in Spatio-Temporal Database

*Aina Musdholifah, Siti Zaiton Mohd Hashim*

Cluster-Based Characterization of Gene Over-Expression in Cancer Sets

*Noha A. Yousri*

## **FUZZY LOGIC BASED APPLICATIONS**

Monday, November 29<sup>TH</sup>, 10:30 – 12:30 Room C

Chair: Hani Hagrass

Data Generated Type-2 Fuzzy Logic Model for Control of Wind

*Mina Zaher, Hani Hagrass*

The Development of Cross-Language Plagiarism Detection Tool Utilising Fuzzy Swarm-Based Summarisation

*Salha Alzahrani, Naomie Salim, Chow Kok Kent, Mohammed Salem Binwahlan, Ladda Suanmali*

Fuzzy Logic-Based for Predicting Roughness Performance of TiAlN Coating

*Abdul Syukor Mohamad Jaya, Siti Zaiton Mohd Hashim, Md. Nizam Abd Rahman*

Detecting Anomalies in Spatiotemporal Data Using Genetic Algorithms with Fuzzy Community Membership

*Garnett Wilson, Simon Harding, Orland Hoeber, Rodolphe Devillers, Wolfgang Banzhaf*

Decision Precising Fuzzy Technology to Evaluate the Credit Risks of Investment Projects

*Gia Sirbiladze, Irina Khutsishvili, Pridon Dvalishvili*

Q( $\lambda$ )-Learning Fuzzy Logic Controller for Differential Games

*Sameh Desouky, Howard Schwartz*

## **S2: HUMAN MONITORING AND MACHINE LEARNING STRATEGIES**

Monday, November 29<sup>TH</sup>, 10:30 – 12:30 Room D

Chair: Giovanni Poggio

Artificial Neural Networks for Nonlinear Regression and Classification

*Alberto Landi, Paolo Piaggi, Marco Laurino, Danilo Menicucci*

Predicting Acute Neurological Diseases with Bayesian Networks

*Stephan Theiss, Jessika Grunwald, Sebastian Schwarz, Mathias Raith, Georg Rose*

Sleeping with Ants, SVMs, Multilayer Perceptrons and SOMs

*Antonio M. Mora, Carlos Fernandes, Luis Javier Herrera, Juan J. Merelo, Pedro A. Castillo, Fernando Rojas*

A Wearable Pervasive Platform for the Intelligent Monitoring of Muscular Fatigue

*Giovanni Poggio, Gennaro Tartarisco, Giulia Ricci, Leda Volpi, Silvio Bonfiglio, Gabriele Siciliano, Danilo De Rossi*

A Generic Framework and Runtime Environment for Development and Evaluation of Behavioral Biometrics Solutions

*Arik Messerman, Tarik Mustafic, Seyit A. Camtepe, Sahin Albayrak*

Road Trajectory Mining and Autonomous Steering Control for Vision-Based Unmanned Vehicles

*Umer Rasheed, Mariam Ahmed*

## **S3: MACHINE LEARNING METHODS FOR DATA STREAMS**

Monday, November 29<sup>TH</sup>, 10:30 – 12:30 Room E

Chair: Michal Wozni

A Speedup SVM Decision Method for Online EEG Processing in Motor Imagery BCI

*He Xu, Wei Song, Zhiping Hu, Cheng Chen, Xiaojie Zhao, Jiakai Zhang*

Designing Combining Classifier with Trained Fuser - Analytical and Experimental Evaluation

*Michal Wozniak, Marcin Zmyslony*

Simple Combining Classifiers for a Special Case of Incremental Concept Drift Problem,

*Bartosz Kurlej, Piotr Sobolewski, Michal Wozniak*

Hand Gesture Tracking System Using Adaptive Kalman Filter

*Shahrel Azmin Suandi, Mohd Shahrime Mohd Asaari*

A Novel Multiagent System Based on Dynamic Fuzzy Cognitive Map Approach

*Hesham Hefny, Ahmed Gadallah*

Performance Analysis of Processes by Automated Simulation of Coloured Petri Nets

*Štefan Korečko Branislav Sobota, Csaba Szabó*

## **INTELLIGENT MODELING AND CONTROL**

Monday, November 29<sup>TH</sup>, 13:30 – 15:50, Room A

Chair: Hani Hagras

T-s Fuzzy Modeling of Interior Permanent Magnet Synchronous Motor

*Fa Guang Wang, Seung Kyu Park, Taesung Yoon, Ho Kyun Ahn*

Linearization of Discrete-Time T-s Fuzzy Model with Multiple Input

*Fa Guang Wang, Seung Kyu Park, Gun Pyong Kwak*

Control of Mobile Robots Based on T-s Fuzzy Linearization

*Geunwoo Whang, Fa Guang Wang, Taesung Yoon, Seung Kyu Park*

Chaotic Control of Deterministic Variability in a BAM-Inspired Model of Memory

*Isar Nejadgholi, Seyyed Ali Seyyed Salehi*

A Plant for Cogeneration of Electricity and Water Powered by Renewable Energy Sources Based on Using High Level of Automation

*Amr Kandil, Essameddin Badreddin, Sherine Rady*

Control of an Active Magnetic Bearing with Multi-Layer Perceptrons Using the Torque Method

*Roger Achkar, Michel J Owayjan*

## **INTELLIGENT CLASSIFIER SYSTEMS**

Monday, November 29<sup>TH</sup>, 13:30 – 15:50, Room B

Chair: Francesco Marcelloni

Using Singularity Exponent in Distance Based Classifier

*Marcel Jirina*

Dynamic Classifier Aggregation Using Fuzzy Integral with Interaction-Sensitive Fuzzy Measure

*David Stefka, Martin Holena*

Hierarchical Multi-Label Classification Incorporating Prior Information for Gene Function Prediction

*Benhui Chen*

Evaluation of Electro-Oculography Data for Ataxia SCA-2 Classification

*Rodolfo García, Fernando Rojas, Jesús González, Olga Valenzuela, Luis Velázquez, Cira Torres, Roberto Becerra-García*

Emotions Analysis of Speech for Call Classification

*Esraa Hassan, Neamat El Gayar, Moustafa Ghanem*

Visual Monitoring of Financial Stability with a Self-Organizing Neural Network

*Peter Sarlin*

Speckle Noise Reduction in SAR Images Using Adaptive Morphological Filter

*Tarek Mahmoud, Ahmed Saleh Mashaly, Ezz AbdElkawy*

## **EVOLUTIONARY COMPUTATION**

Monday, November 29<sup>TH</sup>, 13:30 – 15:50, Room C

Chair: Alaa Sheta

Complementary Crossover for Genetic Software Architecture Synthesis

*Outi Räihä, Kai Koskimies, Erkki Mäkinen*

Entropy-Based Image Fusion with Continuous Genetic Algorithm

*Sertan Erkanli, Zia-ur Rahman*

Solving Deceptive Tasks in Robot Body-Brain Co-Evolution by Searching for Behavioral Novelty

*Peter Krcah*

A GP Effort Estimation Model Utilizing Line of Code and Methodology for NASA Software Projects

*Alaa F. Sheta, Alaa Al-Afeef*

Finding the 3D-Structure of a Molecule Using Genetic Algorithm and Tabu Search Methods

*Abdel-Rahman Hedar, Ahmed Al, Taysir Hassan*

Efficient Evolutionary Image Processing Using Genetic Programming

*Haiying Bai*

## **INTELLIGENT PATTERN RECOGNITION SYSTEMS**

Monday, November 29<sup>TH</sup>, 13:30 – 15:50, Room D

Chair: Mohamed Mostafa

Pixel Density: Recognizing Characters in Saudi License Plates

*Khaled Almustafa, Rached N Zantout, Hasan Obeid*

Pseudo Color Features Extraction Technique for Cervical Cancer of Pap Smear Images

*Siti Noraini Sulaiman, Nor Ashidi Mat Isa, Norhayati Mohamad Noor*

3D Brain Tumor Segmentation Scheme Using K-Mean Clustering and Connected Component Labeling Algorithms

*Hossam Moftah, Aboul Ella Otifey Hassanien, Mahmoud Shoman*

A Validity Index for Outlier Detection

*Noha A. Yousri*

Image Edge Detection Method Based on a Simplified PCNN Model with Anisotropic Linking Mechanism

*Zhan Shi, Jinglu Hu*

A Pattern-Based Framework for Expressing Adaptation Strategies in Adaptive Systems

*Nadjet Zemirline, Yolaine Bourda, Chantal Reynaud*

A Novel Fully Automatic Technique for Liver Tumor Segmentation from CT Scans with knowledge-based constraints

*Nader Hanna Abdel-massieh, Mohiy M. Hadhoud, Khalid Amin*

## **S4: INTELLIGENT COMPUTING IN INFORMATION SECURITY**

Monday, November 29<sup>TH</sup>, 13:30 – 15:50, Room E

Chair: Neveen Ghali

Efficient Scalar Multiplication Based on Window Algorithm with 2's Complement Applied for Elliptic Curve Cryptosystems

*Mohamed M. Abd-Eldayem, Ehab Alnrawy, Aly Fahmy*

An Agent-Based Approach for Policy Enforcement in Secure Workflow Systems

*Hind Alotaibi, Hussein Zedan*

Runtime Verification of Safety Properties in Multi-Agents Systems

*Hind Alotaibi, Hussein Zedan*

Principle Components Analysis and Support Vector Machine Based Intrusion Detection System

*Ashraf Darwish, Heba Eid, Aboul Ella Otifey Hassanien, Ajith Abraham*

SURF: Steganalysis Using Random Forests

*Veena H Bhat, S. Krishna, P. Shenoy*

Baseline Detection Using Particle Swarm Optimisation

*Azlinah Mohamed, Sofianita Mutalib*

## TUESDAY – NOVEMBER 30<sup>TH</sup>

### **W1: WEB MINING AND INFORMATION RETRIEVAL – PART I**

Tuesday, November 30<sup>TH</sup>, 10:30 – 12:30 Room A

Chairs: Pawan Lingras and Virendra Bhavsar

Improving Arabic Document Categorization: Introducing Local Stem

*Eiman Al-Shammari*

A Rough Set Based PCM for Authorizing Grid Resources

*Mustafa Kaiiali, Rajeev Wankar, Raghavendra Rao Chillarige, Arun Agarwal*

Rough, Fuzzy, Interval Clustering for Web Usage Mining

*Manish Joshi, Pawan Lingras, Yiyu Yao, Virendra C Bhavsar*

Belief Rough Set Classification for Web Mining Based on Dynamic Core

*Salsabil Trabelsi, Zied Elouedi, Pawan Lingras*

Data Mining Using NMF and Generalized Matrix Inverse

*Pavel Kromer, Jan Platos, Vaclav Snasel*

Omni Font OCR Error Correction with Effect on Retrieval

*Walid Magdy, Kareem Darwish*

### **S5: INTELLIGENT SYSTEMS AND ARTIFICIAL NEURAL NETWORKS – PART I**

Tuesday, November 30<sup>TH</sup>, 10:30 – 12:30 Room B

Chairs: Amir Sourial and Rabie A. Ramadan

Multiple Neural Networks and Bayesian Belief Revision for a Never-Ending Unsupervised Learning

*Aldo F. Dragoni, Germano Vallesi, Paola Baldassarri*

Artificial Neural Networks for Identifying the Signals of Multivariate EWMA Control Charts

*Francisco Aparisi, Andres Carrion*

Classification of Poincaré Plots for Temporal Series of Heart Rate Variability by Using Machine Learning Techniques

*Andre Ricardo, Maria Angelica Camargo-Brunetto*

Soil Classification: An Application of Self Organizing Map and K-Means

*Sofianita Mutalib, Shuzlina Abdul-Rahman, Azlinah Mohamed*

Intelligent Online Case-Based Planning Agent Model for Real-Time Strategy Games

*Ibrahim Moawad, Mostafa Aref, Abdelrahman Al-Ogail, Omar Enayet*

Adjusted s-Parametric Functions in the Creation of Symmetric Constraints

*Elisabeth Rakus-Andersson*

### **W2: CONSENSUS AND DECISION MAKING – PART I**

Tuesday, November 30<sup>TH</sup>, 10:30 – 12:30 Room C

Chairs: Enrique Herrera Viedma and José Luis García Lapresta

COMAS: A Consensus Multi-Agent Based System

*Francisco Mata, Pedro Sánchez, Ivan Palomares, Francisco Quesada, Luis Martínez*

Consensus Measures Generated by Weighted Kemeny Distances on Weak Orders

*José Luis García-Lapresta, David Perez-Roman*

A Collaborative and Semantic-Based Approach for Recommender Systems

*Roza Lémdani, Nacéra Bennacer, Géraldine Polaillon, Yolaine Bourda*

Using Qualitative Reasoning to Measure Discrepancy and Consensus in Group Decision

*Llorenç Roselló*

A Consensus Support Methodology for the Initial Self-Assessment of the EFQM Excellence Model in Healthcare Organisations

*Juan Manuel Moreno-Rodriguez, Francisco Javier Cabrerizo, Enrique Viedma*

Comparison of Imprecise Fitness Values Modelled by Beta Distributions

*Ignacio Montes, Susana Díaz, Susana Montes*

### **W3: COMPUTATIONAL INTELLIGENCE IN KNOWLEDGE DISCOVERY – PART I**

Tuesday, November 30<sup>TH</sup>, 10:30 – 12:30 Room D

Chairs: Sebastian Ventura, Amelia Zafra and Krzysztof Cios

miDivCon: Framework and Method for Multiple Instance Learning

*Cao Nguyen, Dat Nguyen, Alberto Costa, Katheleen Gardiner, Krzysztof Cios*

A Preliminary Study on Overlapping and Data Fracture in Imbalanced Domains by Means of Genetic Programming-Based Feature Extraction

*Jose G Moreno-Torres, Francisco Herrera*

On the Suitability of Extreme Learning Machine for Gene Classification Using Feature Selection

*Javier Sánchez-Monedero, Manuel Cruz-Ramírez, Francisco Fernández-Navarro, Juan Carlos Fernández, Pedro Antonio Gutiérrez, César Hervás-Martínez*

Ensemble Determination Using the TOPSIS Decision Support System in Multi-Objective Evolutionary Neural Network Classifiers

*Manuel Cruz-Ramírez, Juan Carlos Fernández, Javier Sánchez-Monedero, Francisco Fernández-Navarro, César Hervás-Martínez, Pedro Antonio Gutiérrez, María Teresa Lamata*

A TDIDT Technique for Multi-Label Classification

*Eva Gibaja, Manuel Victoriano, José Luis Ávila, Sebastian Ventura*

Feature Selection is the ReliefF for Multiple Instance Learning

*Amelia Zafra, Mykola Pechenizkiy, Sebastian Ventura*

### **W4: INTELLIGENT DECISION SUPPORT SYSTEMS – PART I**

Tuesday, November 30<sup>TH</sup>, 10:30 – 12:30 Room E

Chairs: Abdel Badeeh M. Salem and Maria Antonina Mach

Clustering-Based Approach for Detecting Breast Cancer Recurrence

*Smaranda Belciug, Abdel-Badeeh Salem, Marina Gorunescu, Florin Gorunescu*

Multi-Agent System for Early Prediction of Urinary Bladder Inflammation Disease

*Walid Adly Atteya, Keshav Dahal, Alamgir Hossain*

Intelligent Techniques for Business Intelligence in Healthcare

*Maria Mach, Abdel-Badeeh Salem*

Possibilistic Aggregation in the Discrete Covering Problems Based on the Expert Valuations

*Gia Sirbiladze, Anna Sikharulidze, Bezhan Ghvaberidze, Bidzina Matsaberidze*

An Intelligent Decision Support System for the Egyptian Food Security

*Ahmed Mohammed Omran, Motaz Khorshid, Mohamed Saleh*

A Combined Coordination Technique for Multi-Agent Path Planning

*Heba Gaber, Abdel-Badeeh Salem, Safaa Amin*

### **W1: WEB MINING AND INFORMATION RETRIEVAL – PART II**

Tuesday, November 30<sup>TH</sup>, 13:30 – 15:30 Room A

Chairs: Pawan Lingras and Virendra Bhavsar

An Automatic Data Mining Authority Control System: A First Approach

*Maria Martin-Bautista, M. A. Vila, Irene Díaz-Valenzuela*

Web-Based Analytical Decision Support System

*Martti Sutinen, Mats Danielson, Love Ekenberg, Aron Larsson*

Improved Relevance Feedback Using Density-Based Clustering

*Kareem Darwish, Noha A. Youstri, Ahmed El Deeb, Mohamed Kamel*

A Query by Humming System for Music Information Retrieval

*Mario Antonelli, Antonello Rizzi, Guido Del Vescovo*

Search Results Presentation and Interface Design. a Comparative Evaluation Study of Five Web Search Engines in Arabic Language

*Wissam Tawileh, Thomas Mandl, Joachim Griesbaum*

Mining Visual Web Knowledge  
*Amani Saad, Mohamed Ismail*

### **S5: INTELLIGENT SYSTEMS AND ARTIFICIAL NEURAL NETWORKS – PART II**

Tuesday, November 30<sup>TH</sup>, 13:30 – 15:30 Room B

Chairs: Amir Sourial and Rabie A. Ramadan

Performance Comparison of Gradient Decent and Genetic Algorithm Based Artificial Neural Networks Training

*Fadzil Ahmad, Nor Ashidi Mat Isa, Muhammad Khusairi Osman*

Efficient Representation of Recurrent Neural Networks for Markovian/Non-Markovian Non-Linear Control Problems

*Maryam Mahsal Khan, Gul Khan, Julian Miller*

Multinomial Self Organizing Maps

*Faryel Allouti, Mohamed Nadif, Benoît Otjacques*

Computer-Based Clinical Decision Support for Laryngopathies Using Recurrent Neural Networks

*Krzysztof Pancierz, Jaroslaw Szkola, Jan Warchol*

Piecewise One Dimensional Self Organizing Map for Fast Feature Extraction

*Alaa Sagheer*

Regression Test Cases Prioritization Using Failure Pursuit Sampling

*Cristian Simons, Emerson C. Paraiso*

### **W2: CONSENSUS AND DECISION MAKING – PART II**

Tuesday, November 30<sup>TH</sup>, 13:30 – 15:30 Room C

Chairs: Enrique Herrera Viedma and José Luis García Lapresta

A New Application of a Fuzzy Linguistic Quality Evaluation System in Digital Libraries

*Ignacio Perez Enrique Viedma, Francisco Javier Cabrerizo*

A Fuzzy Matching Based Recommendation Approach for Mobile Products/Services

*Dianshuang Wu, Guangquan Zhang, Lu Jie, Hua Lin*

Comparing SVM Ensembles for Imbalanced Datasets

*V. Bhatnagar, Manju Bhardwaj, Ashish Mahabal*

Integrating Multiple Modeling and Development Tools for Realization of Distributed Intelligent System

*Radek Koci, Frantisek Zboril, Jakub Zak*

A Mediation System to Facilitate Cooperation in a Co-Design Platform

*Alain-Jérôme Fougères*

The Coordination Index of Triangular Fuzzy Estimates Under Group Decision-Making

*Teimuraz Tsabadze*

### **W3: COMPUTATIONAL INTELLIGENCE IN KNOWLEDGE DISCOVERY – PART II**

Tuesday, November 30<sup>TH</sup>, 13:30 – 15:30 Room D

Chairs: Sebastian Ventura, Amelia Zafra and Krzysztof Cios

A First Approach for Cost-Sensitive Classification with Linguistic Genetic Fuzzy Systems in Imbalanced Data-Sets

*Victoria López, Alberto Fernández, Francisco Herrera*

An Intruder Detection Approach Based on Infrequent Rating Pattern Mining

*Jose Maria Luna, José Raúl Romero, Sebastian Ventura*

An Optoelectronic Expert System for Knowledge Base Systems

*Samy Sayed Abdou Ghoniemy, Omar Karam*

On a Novice-User-Focused Approach to Flexible Querying. the Case of Initially Unavailable Explicit User Preferences

*Slawomir Zadrozny, Janusz Kacprzyk, Maciej Wysocki*

Measuring Information and Knowledge in the Context of Atanassov's Intuitionistic Fuzzy Sets  
*Eulalia Szmidt, Janusz Kacprzyk*

Discussion and Analysis of the Distributed Uncertain Database Systems Ranking  
*Ali I Eldesouky, Hesham Ali, Yousry M AbdulAzeem*

#### **W4: INTELLIGENT DECISION SUPPORT SYSTEMS – PART II**

Tuesday, November 30<sup>TH</sup>, 13:30 – 15:30 Room E

Chairs: Abdel Badeeh M. Salem and Maria Antonina Mach

A Multicriteria Bayesian Intelligent Tutoring System MBITS  
*Yamna Ettarres, Khaled Mellouli, Pierre-Henri Wuillemmin*

Data Driven DSS in Telecommunications Industry  
*Hoda Abdel Hafez*

Linear Programming with Fuzzy Joint Parameters: An Iterative Method  
*Juan Figueroa García, Leidy Yamile Olarte Ramos, John Camargo Sanabria*

Towards a Novel Approach for High-Stake Decision Support System Based on Community  
Contributed Knowledge Base  
*Yannick Naudet, Thibaud Latour, Geraldine Vidou, Younes Djaghloul*

Fault Diagnosis of Transformer Using Association Rule Mining and Knowledge Base  
*Tiefeng Zhang, Lu Jie, Guangquan Zhang, Qian Ding*

Dempster-Shafer Temporalized Belief Structure on Expert Knowledge Streams. Part I. Theoretical  
Foundations  
*Gia Sirbiladze, Anna Sikharulidze*

#### **W1: WEB MINING AND INFORMATION RETRIEVAL – PART III**

Tuesday, November 30<sup>TH</sup>, 16:00 – 18:20 Room A

Chairs: Pawan Lingras and Virendra Bhavsar

Analyzing Conversations with Dynamic Graph Visualization  
*Sergey Pupyrev, Aleksey Tikhonov*

Leveraging temporal expressions for segmented-based information retrieval  
*Olga Craveiro, Joaquim H Macedo, Henrique Madeira*

Using a Cross-Language Information Retrieval Approach to Improve Computer-Aided Translation  
Performance  
*Nasredine Semmar, Hassane Essafi*

Information Gathering Within Websites: Visualized Links for Navigation (VLN), Anwar Alhenshiri,  
Carolyn Watters  
*Michael Shepherd, Michael Bliemel*

Perceptual Semantics: A Three-Level Approach  
*Baingio Pinna, Jurgis Škilters*

Towards Developing an Arabic Word Alignment Annotation Tool with Some Arabic Alignment  
Guidelines  
*Hesham AbdElazim Ismail Mohamed Kholidy, Niladri Chatterjee*

Ontology-Style Web Usage Model for Semantic Web Applications  
*Sang Nguyen, Haiyan Lu, Lu Jie*

#### **W5: WEB ENGINEERING**

Tuesday, November 30<sup>TH</sup>, 16:00 – 18:20 Room B

Chairs: Natheer Khasawneh, Safwan Al-Omari and Chien-Chung Chan

Using RuleML and Database Metadata for Automatic Generation of Web Forms  
*Atia Albhah, Mick J Ridley*



A Selection-Based Item Display for Inquiring About the Long-Term Care Insurance System  
*Hidehiro Kanemitsu*

A User-Adaptive Symbol Presentation for Non-Verbal Communication  
*Hongyan Gao, Hidehiro Kanemitsu, Yoshiyori Urano*

Converting Web Applications Into Standard XML Web Services: Two Case Studies  
*Natheer Khasawneh, Mohammed Ali Shatnawi, Mohammad Fraiwan*

Mining Pharmaceutical Spam From Twitter  
*Kathy Liszka, Chien-Chung Chan, Chandra Shekar, Shruti Wakade*

An Associative Watermarking Based Image Authentication Scheme, Lamiaa Elbakrawy  
*Neveen Ghali, Aboul Ella Otifey Hassanien, Ajith Abraham*

## **S6: INTELLIGENT VISUAL SURVEILLANCE SYSTEMS**

Tuesday, November 30<sup>TH</sup>, 16:00 – 18:20 Room C

Chair: Elsayed Hemayed

Rule-Based Approach for Enhancing the Motion Trajectories in Human Activity Recognition  
*Sherien Hassan, Ahmed Al-Sadek, Elsayed Hemayed*

Low Complexity Contrast Enhancement Algorithm for Nighttime Visual Surveillance  
*Mohammed Sayed, Justin Delva*

A Generalized Object Detection System Using Automatic Features Selection  
*Haitham A. Almarakeby, Mohamed Zaki, Samir I. Shaheen*

A New EEG Feature Selection Method for Self-Paced Brain-Computer Interface  
*Zhiping Hu, Guangming Chen, Jiakai Zhang, He Xu*

Enhancement Technique for Uniformly and Non-Uniformly Illuminated Dark Images  
*Sertan Erkanli, Zia-ur Rahman*

Wavelet Based Enhancement Technique for Non-Uniform and Uniform-Dark Images  
*Sertan Erkanli, Zia-ur Rahman*

Incremental Creation of a 3D Map with a Stereocamera  
*Jaroslav Rozman*

## **S7: INTELLIGENT E-LEARNING SYSTEM**

Tuesday, November 30<sup>TH</sup>, 16:00 – 18:20 Room D

Chairs: Norazah Yusof, Nor Bahiah Hj. Ahmad and Siti Mariyam Shamsuddin

Determination of Bloom's Cognitive Level of Question Items Using Artificial Neural Network  
*Norazah Yusof*

Educational Content Delivery: An Experimental Study Assessing the Students Preferences for Multimedia Content when Monetary Cost is Involved  
*Andreea Molnar, Cristina Hava Muntean*

A Comparative Analysis of Mining Techniques for Automatic Detection of Student's Learning Style  
*Nor Bahiah Ahmad*

Automatic Evaluation of Created Tasks in E-Learning Environment  
*Radoslav Fasuga, Michal Radecky*

Kernel ICA Applied to Feature Extraction for Image Annotation  
*Bingxin Xu, Ping Guo*

Iris Recognition on GPU with the Usage of Non-Negative Matrix Factorization  
*Petr Gajdos, Jan Platos, Pavel Moravec*

## **INTELLIGENT DATA ANALYSIS**

Tuesday, November 30<sup>TH</sup>, 16:00 – 18:20 Room E

Chairs: Francesco Marcelloni, Abdelbadeeh Salem

Using a Clustering Similarity Measure for Feature Selection in High Dimensional Data Sets  
*Jorge M. Santos, Sandra Ramos*

Feature Data Optimization with LVQ Technique in Semantic Image Annotation

*Ziheng Jiang, Jing He, Ping Guo*

Event Driven Multi-Context Trust Model

*Jan Samek, Frantisek Zboril, Ondrej Malacka*

Automatic Extraction and Classification Approach of Opinions in Texts

*Rihab Bouchlaghem, Aymen Elkhelifi, Rim Faiz*

A Novel Shape Based Batching and Prediction Approach for Time Series Using HMMs and FISs

*Saurabh Bhardwaj*

An Intelligent DSS to Anticipate the Impacts of Wildcards on the Tourism Industry in Egypt

*Ahmed Mohammed Omran, Mohamed Saleh, Nedaa Agami, Hisham ElShishiny*

## WEDNESDAY, DECEMBER 1<sup>ST</sup>

### **W6: COMPUTATIONAL INTELLIGENCE FOR PERSONALIZATION IN WEB CONTENT AND SERVICE DELIVERY**

Wednesday, December 1<sup>ST</sup>, 10:30 – 12:30 Room A

Chairs: Giovanna Castellano, Mario Giovanni C.A. Cimino, Francesco Marcelloni, Maria Alessandra Torsello

Feature Selection for User-Adaptive Content-Based Music Retrieval Using Particle Swarm Optimization

*Toru Nozak, Keisuke Kameyama*

Multicriteria Predictors Using Aggregation Functions Based on Item Views

*Fabián Pérez Lousame, Eduardo Sanchez Vila*

Omega Network: An Adaptive Approach to Social Learning

*Matteo Dominoni, Giorgio Riva, Stefano Pinardi*

A Competitive Learning Strategy for Adapting Fuzzy User Profiles

*Giovanna Castellano, Danilo Dell'Agnello, Anna Fanelli, Corrado Mencar, Maria Torsello*

Using Context History to Personalize a Resource Recommender Via a Genetic Algorithm

*Alessandro Ciaramella, Mario Giovanni C.A. Cimino, Beatrice Lazzerini, Francesco Marcelloni*

Financial Events Detection by Conceptual News Categorization

*Ali Al-Jaoua*

### **W7: COMPUTATIONAL INTELLIGENCE & PATTERN RECOGNITION – PART I**

Wednesday, December 1<sup>ST</sup>, 10:30 – 12:30 Room B

Chairs: Siti Mariyam Shamsuddin, Kai Xiao, Aboul Ella Hassanien

Recognizing Handwritten Arabic Script Through Efficient Skeleton-Based Grapheme Segmentation Algorithm

*Gheith A. Abandah, Fuad Jamour*

Self-Adaptive Gaussian Mixture Models for Real-Time Video Segmentation and Background Subtraction

*Nicola Greggio*

Optimizing Web-Based Virtual Reality Models

*Rana A. Kader El-Bahnasawy, Iman A. El-Azab, Hoda M. Onsi*

Ethiopian Sign Language Recognition Using Artificial Neural Network

*Kumudha Raimond, Yonas Admasu*

Some Characteristic of Error in Two-Class Problem with Fuzzy Observations

*Robert Burduk*

### **S8: METAHEURISTIC APPROACHES IN DATA MINING AND FEATURE SELECTION – PART I**

Wednesday, December 1<sup>ST</sup>, 10:30 – 12:30 Room C

Chairs: Abdul RazakHamdan, Azuraliza Abu Bakar and Salwani Abdullah

Ant Colony Reduction with Modified Rules Generation for Rough Classification Model

*Azuraliza Abu Bakar, Salwani Abdullah*

Integrating Rough Set Theory and Particle Swarm Optimization in Feature Selection

*Shuzlina Abdul-Rahman, Azuraliza Abu Bakar, Zeti A.M Hussein*

Hybrid Variable Neighbourhood Search Algorithm for Attribute Reduction in Rough Set Theory

*Salwani Abdullah, Yahya Z. Arajy*

A Rough Set Outlier Detection Based on Particle Swarm Optimization

*Misinem Abdul Razak Hamdan, Azuraliza Abu Bakar, Mohd Zakree Nazri*

Improving Signature Detection Classification Model Using Features Selection Based on Customized Features

*Zulaiha Ali Othman, Azuraliza Abu Bakar*

A Constructive Hyper-Heuristics for Rough Set Attribute Reduction  
*Salwani Abdullah, Nasser Sabar, Barry McCollum, Mohd Zakree Nazri, Hamza Turabieh*

### **S9: ADVANCES IN ROBOTICS AND VIRTUAL REALITY**

Wednesday, December 1<sup>ST</sup>, 10:30 – 12:30 Room D

Chairs: Tauseef Gulrez, Alessandro Tognetti, Manolya Kavakli

GPU-Based Real-Time Virtual Reality Modeling and Simulation of Seashore

*Minzhi Luo, Guanghong Gong, Abdelkader El Kamel*

Information-Theoretic Environment Modeling for Efficient Topological Localization

*Sherine Rady*

Interreality: The Use of Advanced Technologies in the Assessment and Treatment of Psychological Stress

*Giovanni Poggio, Nicola Carbonaro, Gaetano Anania, Alessandro Tognetti, Gennaro Tartarisco, Marcello Ferro, Danilo De Rossi, Andrea Gaggioli, Giuseppe Riva*

Heterogeneous Sensor Fusion Framework for Autonomous Mobile Robot Obstacle Avoidance

*Ali Zia, Tauseef Gulrez*

B´ezier Curve Based Dynamic Obstacle Avoidance and Trajectory Learning for Autonomous Mobile Robots

*Tayyab Chaudhry, Tauseef Gulrez, Shyba Zaheer, Ali Zia*

Stator Resistance Identification Using Artificial Intelligent Technique for the Adaptive Controller of Magnetically Saturated Induction Motor

*Mohamed Ismail*

### **W8: NATURAL LANGUAGE UNDERSTANDING**

Wednesday, December 1<sup>ST</sup>, 10:30 – 12:30 Room E

Chairs: Anna Maria Di Sciullo and Abdel-Badeeh M. Salem

Improving Statistical Parsing by Linguistic Regularization

*Robert Berwick, Igor Malioutov*

A Computational Model of Language Generation Applied to English Wh-Questions

*Jason Ginsburg*

Word Order, Complementation and Tense

*Manuela Ambar*

Phase Theory and Split-Ergativity

*Catherine Provencher*

Automatic Generation of a Software Requirements Specification (SRS) Document

*Marinos Georgiades*

Pronominal Anaphora Understanding

*Anna Sciullo, Stanca Somesfalean, Calin Batori, Philippe Gabrini*

### **S10: DATA MINING AND LEARNING TECHNIQUES IN INTELLIGENT SYSTEMS – PART I**

Wednesday, December 1<sup>ST</sup>, 13:30 – 15:30 Room A

Chairs: Been-Chian Chien and Tameem Adel

Enhanced Semantic Automatic Ontology Enrichment

*Ali Harb*

Evaluating the Performance of Partitioning Techniques for Gene Network Inference

*Suhaila Zainudin*

AWG-Detector: A Machine Learning Tool for the Accurate Detection of Anomalies Due to Wind Gusts (AWG) in the Adaptive Altitude Control Unit of an Aerosonde Unmanned Aerial Vehicle

*Muhammad Jamal Afridi*

An Intelligent System for Accelerating Parallel SVM Classification Problems on Large Datasets Using GPU

*Qi Li*

A Semi-Supervised Learning Approach for Soft Labeled Data

*Mohamed El-Zahhar, Neamat El Gayar*

An Accelerated Soft C-Means Clustering Algorithm

*Tameem Adel, Mohamed Ismail*

## **W7: COMPUTATIONAL INTELLIGENCE & PATTERN RECOGNITION – PART II**

Wednesday, December 1<sup>ST</sup>, 13:30 – 15:30 Room B

Chairs: Siti Mariyam Shamsuddin, Kai Xiao, Aboul Ella Hassanien

Using Intrinsic Surface Geometry and Absolute Invariants for 3D Face Alignment and Registration

*Fernand Cohen, Chuchart Pintavirooj, Prasong Tosranon*

Exploiting Fuzzy Approximator to Head Pose Estimation

*S. Kazem Shekofteh, Maryam Baradaran -Khalkhali*

Image Thresholding Using Neural Network

*Ahmed Othman, Hamid R. Tizhoosh*

A computational model of the log-polar retina mosaic for local feature extraction

*Indradeo Ram, J. Paul Siebert*

Continuous Range Monitoring of Moving Objects in Road Networks

*Chen Wang, Tongyu Zhu, Weifeng Lv, Jian Huang*

Mining Based File Caching in Hybrid System

*Sungwoo Hong, Yohwna Kim, Youjip Won*

## **S8: METAHEURISTIC APPROACHES IN DATA MINING AND FEATURE SELECTION – PART II**

Wednesday, December 1<sup>ST</sup>, 13:30 – 15:30 Room C

Chairs: Abdul Razak Hamdan, Azuraliza Abu Bakar and Salwani Abdullah

Investigating Composite Neighbourhood Structure for Attribute Reduction in Rough Set Theory

*Salwani Abdullah, Saif Jihad*

Rough Set Clustering Approach to Replica Selection in Data Grids (RSCDG)

*Rafah Mohammed Almuttairi, Rajeev Wankar, Atul Negi, Raghavendra Rao Chillarige*

Adaptive Randomized Descent Algorithm Using Round Robin for Solving Course Timetabling Problems

*Anmar Abuhamdah, Masri Ayob*

A Quantitative Framework for Dependency-Aware Organizational IT Risk Management

*Stephan Schmidt, Sahin Albayrak*

An Agent-Based Architecture for Intelligent Decision Support System

*Nagwa Badr*

Improved SAX Time Series Data Representation Based on Relative Frequency and K-Nearest Neighbor Algorithm

*Almahdi Ahmed, Azuraliza Abu Bakar, Abdul Razak Hamdan*

## **W9: COMPUTATIONAL INTELLIGENCE IN BIOINFORMATICS AND BIOMEDICINE**

Wednesday, December 1<sup>ST</sup>, 13:30 – 15:30 Room D

Chairs: Mariofanna Milanova, Aboul Ella Hassanien and Ajith Abraham

Overlapping Cells Separation Method for Cervical Cell Images

*Siti Noraini Sulaiman, Nor Ashidi Mat Isa, Intan Aidha Yusoff*

Biclustering of DNA Microarray Data Using Artificial Immune System

*Waleed Abohamad, Mohammed Korayem, Khaled Mostafa*

A Genetic Algorithm-Neural Network Approach for Mycobacterium Tuberculosis Detection in Ziehl-Neelsen Stained Tissue Slide Images

*Muhammad Khusairi Osman, Fadzil Ahmad, Zuraidi Saad, Mohd Yusoff Mashor, Hasnan Jaafar*

Using a Support Vector Machine to identify pre-miRNAs in soybean (*Glycine max*) introns

*Paulo Silla, Maria Angelica Camargo-Brunetto, Eliseu Binneck*

Support Vector Machine Ensembles Using Features Distribution among Subsets for Enhancing Microarray Data Classification

*Eman Ahmed, Neamat El-Gayar, Iman A. El-Azab*

A Novel Interactive Visualization Framework for Gene Expression Analysis

*Nesreen Mahmoud, Hend El-Eraky, Noha A. Yousri, Sara Magdy*

## **W10: COMPUTATIONAL INTELLIGENCE FOR MULTIMEDIA VISUAL INFORMATION PROCESSING**

Wednesday, December 1<sup>ST</sup>, 13:30 – 15:30 Room E

Chairs: Yousef Alqasrawi, Daniel Neagu and Peter Cowling

Image Annotation Using Principal Component Analysis of Census Transform

*Jungwon Hwang, HyunCheol Kim, Whoi-Yul Kim*

Progressive and Autonomous Approach Towards the Generation of Personalized Web Maps

*Nafaa Jabeur, Nabil Sahli*

Spatial Pyramid Local Keypoints Quantization for Bag of Visual Patches Image Representation

*Yousef Alqasrawi, Daniel Neagu, Peter Cowling*

Semi-Automatic Annotation System for Home Videos

*Aboul Ella Otifey Hassanien, Nashwa El-Bendary, Hossam Zawbaa, Vaclav Snasel*

Processing 3D Scanner Data for Virtual Reality

*Csaba Szabó, Štefan Korečko, Branislav Sobota*

Identifying an Efficient and Robust Sub-Shot Segmentation Method for Home Movie Summarisation

*Saman Cooray, Noel O'Connor*

## **S10: DATA MINING AND LEARNING TECHNIQUES IN INTELLIGENT SYSTEMS – PART II**

Wednesday, December 1<sup>ST</sup>, 16:00 – 18:00 Room A

Chairs: Been-Chian Chien and Tzung-Pei Hong

Uni-Class Pattern-based Classification Model

*Mostafa Salama, Aboul Ella Otifey Hassanien, Aly Fahmy*

Multi-Table Association Rules Hiding

*Shyue-Liang Wang, Tzung-Pei Hong, Yu-Chuan Tsai, Hung-Yu Kao*

Design of an Adaptive Curriculum Portfolio Recommendation System by Learning Object Similarity Evaluation and Group Decision Modeling

*Frank Tseng*

An Intelligent Context Interpreter Based on XML Schema Mapping

*Been-Chian Chien, Shiang-Yi He*

A Method to Build Similarity Relations into Extended Rough Set Theory

*Yaima Filiberto, Rafael Bello, Yaile Caballero, Yaile Caballero, Rafael Larrua*

Stratified Random Sampling Technique for Integrated Two-Stage Multi-Neighbourhood Tabu Search for Examination Timetabling Problem

*Ariff Md Ab Malik, Masri Ayob, Abdul Razak Hamdan*

### **W11: INTELLIGENT AGENTS IN COMMUNICATION AND CONTROL SYSTEMS**

Wednesday, December 1<sup>ST</sup>, 16:00 – 18:00 Room B

Chairs: Ibrahiem M. M. El Emary and Ajith Abraham

An Ant Colony Optimization Algorithm for the Mobile Ad Hoc Network Routing Problem Based on AODV Protocol

*Ahmed M Abdel-Moniem, Marghny Mohamed, Abdel-Rahman Hedar*

The Effect of Frame Length, Fragmentation and RTS/CTS Mechanism on IEEE 802.11 MAC Performance

*Ahmed Sweedy*

Embedded Server and Client System for Home Appliances on Real-Time Operating System

*Takako Nonaka, Masato Shimano, Yuta Uesugi, Tomohiro Hase*

On RTO Timer Implementation in TCP

*Zheng Wen, Kwan Yeung*

Study on Sensor Fusion for Detecting Human's Thermal Comfort Considering of Individuals

*Kazuyuki Kojima*

Secure Personal Authentication System for Home Network

*Takako Nonaka, Yuta Uesugi, Tomohiro Hase*

### **S11: CONTENT ANALYSIS AND PROTECTION FOR MULTIMEDIA**

Wednesday, December 1<sup>ST</sup>, 16:00 – 18:00 Room C

Chairs: Chuan-Yu Chang and Chun-Ta Li

On Security of a More Efficient and Secure Dynamic ID-Based Remote User Authentication Scheme

*Cheng-Chi Lee, Chun-Ta Li, Chin-Ling Chen, Rui-Xiang Chang*

Adaptive Reversible Data Hiding Based on Histogram

*Wen-Chung Kuo, Lihchyau Wu, Po-Yo Lai*

Cryptanalysis of Khan Et Al.'s Dynamic ID-Based Remote User Authentication Scheme

*Chun-Ta Li, Cheng-Chi Lee, Chen-Ju Liu, Chin-Wen Lee*

Using Gait Information for Gender Recognition

*Chuan-Yu Chang, Tai-Hua Wu*

Matching Ontological Subgraphs to Concepts: A Preliminary Rough Set Approach

*Krzysztof Panczerz, Piotr Grochowalski*

Intelligent Computing Technologies in Music Processing for Blind People

*Wladyslaw Homenda*

### **W12: NATURE INSPIRED MODELS FOR REAL WORLD APPLICATIONS**

Wednesday, December 1<sup>ST</sup>, 16:00 – 18:00 Room D

Chairs: Emilio Corchado and Dominik Slezak

Automatic Extraction and Intelligent Searching on a Mobile Platform

*M. Saravanan, S. Archana, R. Iswaryaa, Garigipati Prasad*

Avoiding Simplification Strategies by Introducing Multi-Objectiveness in Real World Problems

*Charlotte J. Rietveld, Gijs Hendrix, Frank Berkers, Nadine N. Croes, Selmar K. Smit*

Optimizing a Dental Milling Process by Means of Soft Computing Techniques

*Raquel Redondo, Emilio Corchado, Javier Sedano*

Intelligent Multi-Agent System for Information Monitoring

*Saad M. Darwish, Amr El Shenawy*

A Study for Access Control Flow Analysis with a Proposed Job Analyzer Component Based on Stack Inspection Methodology

*Hesham AbdElazim, Ismail Mohamed Kholidy*

Big Bang-Big Crunch Optimization Algorithm to Solve the Course Timetabling Problem

*Ghaith Jaradat, Masri Ayob*

## **S12: DATA MINING AND ONTOLOGIES MODELS, APPLICATIONS AND SOLUTIONS**

Wednesday, December 1<sup>ST</sup>, 16:00 – 18:00 Room E

Chairs: Silvio Bortoleto, Nelson Ebecken and Michal Wozniak

Associative Prediction Model and Clustering for Product Forecast Data

*Ruhaizan Ismail, Zalinda Othman Othman, Azuraliza Abu Bakar*

Wiki-Rec: A Semantic-Based Recommendation System Using Wikipedia as an Ontology

*Ahmed Elgohary, Hussein Nomier, Ibrahim Sabek, Mohamed Samir Galal, Moustafa Badawy, Noha A. Yousri*

An Intelligent Fuzzy Multifactor Based Decision Support System for Crack Detection of Underground Sewer Pipelines

*Ayan Chaki, Tanushyam Chattopadhyay*

Development of Knowledge Model for Insurance Product Decision Using the Associative Classification Approach

*Azuraliza Abu Bakar, Zalinda Othman Othman, Ruhaizan Ismail*

Hyper-Heuristic Approaches for the Dynamic Generalized Assignment Problem

*Berna Kiraz, Haluk R Topcuoglu*

Automated Optimization of Data-Path Design by Improving Circuit Area and Critical Time Through Adaptive Transformation

*Sunila Saqib*