FUZZ-IEEE 2018 Program

Tutorial FUZZ5_01: Type-2 Fuzzy Sets and Systems
Sunday, July 8, 8:00AM-10:00AM, Room: Oceania V, Instructor: Christian Wagner, Jon Garibaldi, and Josie McCulloch

Tutorial FUZZ6_01: Fuzzy Logic and Machine Learning
Sunday, July 8, 8:00AM-10:00AM, Room: Oceania VI, Instructor: Hamid Tizhoosh

Tutorial FUZZ5_01: Type-2 Fuzzy Sets and Systems
Sunday, July 8, 10:15AM-12:15PM, Room: Oceania V, Instructor: Christian Wagner, Jon Garibaldi, and Josie McCulloch

Tutorial FUZZ6_01: Fuzzy Logic and Machine Learning
Sunday, July 8, 10:15AM-12:15PM, Room: Oceania VI, Instructor: Hamid Tizhoosh

Tutorial FUZZ5_02: Fuzzy Systems in Medicine and Healthcare
Sunday, July 8, 1:00PM-3:00PM, Room: Oceania V, Instructor: Uzay Kaymak and Joao Miguel da Costa Sousa

Tutorial FUZZ6_02: Uncertainty Modeling in Learning from Big Data
Sunday, July 8, 1:00PM-3:00PM, Room: Oceania VI, Instructor: Xizhao Wang

Tutorial FUZZ5_03: Support Fuzzy Machines: From Kernels on Fuzzy Sets to Machine Learning
Sunday, July 8, 3:15PM-5:15PM, Room: Oceania V, Instructor: Jorge Guevara, Roberto Hirata, and Stephane Canu

Tutorial FUZZ6_02: Uncertainty Modeling in Learning from Big Data
Sunday, July 8, 3:15PM-5:15PM, Room: Oceania VI, Instructor: Xizhao Wang

Tutorial FUZZ5_04: Fuzzy Sets, Computer Science and (Fuzzy) Algorithms
Sunday, July 8, 5:15PM-7:15PM, Room: Oceania V, Instructor: Rudolf Seising

Session M11: Best Paper Award
Monday, July 9, 8:00AM-10:00AM, Room: Aruba II-III, Chair: Uzay Kaymak

8:00AM   Mutual Information Based K-Labelsets Ensemble for Multi-Label Classification [#18072]
Ran Wang, Sam Kwong, Yuheng Jia, Zhiqi Huang and Lang Wu
Shenzhen University, China; City University of Hong Kong, Hong Kong

8:20AM   Ontology-based Fuzzy Markup Language Agent for Student and Robot Co-Learning [#18075]

Chang-Shing Lee, Mei-Hui Wang, Tzong-Xiang Huang, Li-Chung Chen, Yung-Ching Huang, Sheng-Chi Yang, Chien-Hsun Tseng, Pi-Hsia Hung and Naoyuki Kubota

National University of Tainan, Taiwan; Tokyo Metropolitan University, Japan

8:40AM Efficient Generation of Reliable Estimated Linguistic Summaries [#18233]

Gregory Smits, Pierre Nerzic, Olivier Pivert and Marie-Jeanne Lesot

Univ Rennes - IRISA, France; Sorbonne Universite, France

9:00AM A First Approach for Handling Uncertainty in Citizen Science [#18247]

Manuel Jimenez, Isaac Triguero and Robert John

University of Nottingham, United Kingdom

9:20AM Recursive Identification Approach of Multivariable Nonlinear Dynamic Systems based on Evolving Fuzzy Hammerstein Models [#18273]

Ginalber Serra and Jessica Santos

IFMA, Brazil; UFMA, Brazil

9:40AM Forecasting Directional Change Uncertainty Using Probabilistic Fuzzy Systems [#18337]

Rui Jorge Almeida and Nalan Basturk

Department of Quantitative Economics, Maastricht University, Netherlands

Special Session M12: Computational Intelligence Methods for Natural Language Processing
Monday, July 9, 8:00AM-10:00AM, Room: Galapagos I, Chair: Joao Paulo Carvalho and Keeley Crockett

8:00AM FUSE (Fuzzy Similarity Measure) - A measure for determining fuzzy short text similarity using Interval Type-2 fuzzy sets [#18101]

Naeemeh Adel, Keeley Crockett, Alan Crispin, David Chandran and Joao Paulo Carvalho

Manchester Metropolitan University, United Kingdom; Kings College London, United Kingdom; INESC-ID / Instituto Superior Tecnico, Universidade de Lisboa, Portugal

8:20AM Using Fuzzy Fingerprints for Cyberbullying Detection in Social Networks [#18232]

Hugo Rosa, Joao P. Carvalho, Pavel Calado, Bruno Martins, Ricardo Ribeiro and Luisa Coheur

INESC-ID / Instituto Superior Tecnico, Universidade de Lisboa, Portugal; INESC-ID / ISCTE-IUL, Instituto Universitario de Lisboa, Portugal

8:40AM Towards Computational Fact-Checking: Is the information checkable? [#18238]

Hugo Farinha and Joao P. Carvalho

Agile-TM / Instituto Superior Tecnico, Universidade de Lisboa Lisboa, Portugal, Portugal; INESC-ID/ Instituto Superior Tecnico, Universidade de Lisboa, Portugal

9:00AM A Fuzzy Approach to Improve an Unsupervised Automatic Keyphrase Extraction Process [#18288]

Yamel Perez-Guadarrama, Alfredo Simon-Cuevas, Wenny Hojas-Mazo, Jose A. Olivas and Francisco P. Romero

Centro de Aplicaciones de Tecnologia Avanzada (CENATAV), Cuba; Universidad Tecnologica de La Habana Jose Antonio Echeverria (CUJAE), Cuba; Universidad de Castilla La Mancha, Spain

9:20AM Computational Intelligence Framework for Automatic Quiz Question Generation [#18151]

Akhil Killawala, Igor Khokhlov and Leon Reznik

Rochester Institute of Technology, United States

9:40AM   An End-to-End Neural Dialog State Tracking for Task-Oriented Dialogs [#18062]

A-Yeong Kim, Tae-Hyeong Kim, Hyun-Je Song and Seong-Bae Park

Kyungpook National University, Korea (South); Naver Corporation, Korea (South); Kyung Hee University, Korea (South)

Session M13: Fuzzy Measures and Integrals
Monday, July 9, 8:00AM-10:00AM, Room: Galapagos II, Chair: Radko Mesiar and Jun Li

8:00AM   Decision Making Based on Optimal Measures under Intuitionistic Fuzzy Environment [#18097]

Yao Ouyang, Jun Li and Radko Mesiar

Faculty of Science, Huzhou University, China; School of Sciences, Communication University of China, China; Faculty of Civil Engineering, Slovak University of Technology, Slovakia

8:20AM   Explainable AI for Understanding Decisions and Data-Driven Optimization of the Choquet Integral [#18064]

Bryce Murray, M. Aminul Islam, Anthony J. Pinar, Timothy C. Havens, Derek T. Anderson and Grant Scott

Mississippi State University, United States; Michigan Technological University, United States; University of Missouri, United States

8:40AM   SPFI: Shape-Preserving Choquet Fuzzy Integral for Non-Normal Fuzzy Set-Valued Evidence [#18305]

Timothy Havens, Anthony Pinar, Derek Anderson and Christian Wagner

Michigan Technological University, United States; University of Missouri, United States; University of Nottingham, United States

9:00AM   An Improved Context-Aware Matrix Factorization Model Incorporating Fuzzy Measures [#18280]

Rim Dridi, Tagreed Alsulumani, Saloua Zammali and Khedija Arour

University of Manouba, Tunisia; University of Jeddah, Saudi Arabia; University Tunis El-Manar, Tunisia

9:20AM   A First Approach Towards The Usage Of Classifiers' Performance To Create Fuzzy Measures For Ensembles Of Classifiers: A Case Study On Highly Imbalanced Datasets [#18208]

Mikel Uriz, Daniel Paternain, Humberto Bustince and Mikel Galar

Public University of Navarre, Spain

Session M14: Fuzzy Modeling and Forecasting
Monday, July 9, 8:00AM-10:00AM, Room: Galapagos III, Chair: Leandro Maciel and Goran Andonovski

8:00AM   Fuzzy rule-based modeling for interval-valued time series prediction [#18109]

Leandro Maciel and Rosangela Ballini

Federal University of Sao Paulo, Brazil; University of Campinas, Brazil

8:20AM   d-FuzzStream: A Dispersion-Based Fuzzy Data Stream Clustering [#18175]

Leonardo Schick, Priscilla de Abreu Lopes and Heloisa Camargo

Universidade Federal de Sao Carlos, Brazil; Itera, Brazil

8:40AM   Dynamic Rough-Fuzzy Support Vector Domain Description for Outlier Detection [#18221]

Ramiro Saltos and Richard Weber

Universidad de Chile, Chile

9:00AM   Partial cloud-based evolving method for fault detection of HVAC system [#18253]
Goran Andonvoski, Saso Blazic and Igor Skrjanc
Faculty of Electrical Engineering, University of Ljubljana, Slovenia

9:20AM   Kernel Evolving Participatory Fuzzy Modeling for Time Series Forecasting [#28009]
Rafael Vieira, Fernando Gomide and Rosangela Ballini
University of Campinas, Brazil

Plenary Talk Plenary1: Fuzzy Associative Memories: Theory and Applications
Monday, July 9, 1:00PM-2:00PM, Room: Americas, Speaker: Marcos Valle

Session M21: Best Student Paper Award
Monday, July 9, 2:10PM-4:10PM, Room: Aruba II-III, Chair: Plamen Angelov

2:10PM   Higher Order Initial Value Problem with Interactive Fuzzy Conditions [#18124]
Vinicius Wasques, Estevao Esmi, Laecio Barros, Francielle Pedro and Peter Sussner
University of Campinas, Brazil; University of Campinas, Germany

2:30PM   Incremental Gaussian Granular Fuzzy Modeling Applied to Hurricane Track
Forecasting [#18156]
Eduardo Almeida Soares, Heloisa de Arruda Camargo, Suzana Camargo and Daniel
Furtado Leite
Federal University of Sao Carlos, Brazil; Columbia University, United States; Federal
University of Lavras, Brazil

2:50PM   Interval Type-2 Fuzzy Logic Based Stacked Autoencoder Deep Neural Network For
Generating Explainable AI Models in Workforce Optimization [#18162]
Ravikiran Chimatapu, Hani Hagras, Andrew Starkey and Gilbert Owusu
University of Essex, United Kingdom; British Telecom, United Kingdom

3:10PM   Improving Hamming distance based fuzzy join in Map Reduce using Bloom Filters
[#18186]
Thi-To-Quyen Tran, Thuong-Cang Phan, Anne Laurent and Laurent D'Orazio
Univ Rennes, CNRS, IRISA, France; Cantho University, Viet Nam; Univ Montpellier,
LIRMM, CNRS, France

Session M22: Clustering I
*Monday, July 9, 2:10PM-4:10PM, Room: Galapagos I, Chair: Heloisa Camargo and Renata
Reiser*

2:10PM   A Fuzzy Multiclass Novelty Detector for Data Streams [#18160]
Tiago Pinho da Silva, Leonardo Schick, Priscilla Lopes and Heloisa Camargo
Universidade Federal de Sao Carlos, Brazil; Itera, Brazil

2:30PM   Fuzzy and Possibilistic Clustering for Multiple Instance Linear Regression [#18053]
Mohamed Trabelsi and Hichem Frigui
University of Louisville, United States

2:50PM   Analysis of Streaming Clustering Using an Incremental Validity Index [#18048]
Omar Ibrahim, James Keller and James Bezdek
University of Missouri, United States

3:10PM   Possibilistic Clustering with Seeds [#18063]
Violaine Antoine, Jose Guerrero, Tanya Boone and Gerardo Romero

LIMOS, France; Irstea, France; Electronic Department, Mexico

3:30PM   A Soft Davies-Bouldin Separation Measure [#18018]

Alberto A. Vergani and Elisabetta Binaghi

University of Insubria, Italy

3:50PM   A Two-Stage Fuzzy C-Means Data Placement Strategy for Scientific Cloud Workflows [#18248]

Hamdi Kchaou, Zied Kechaou and Adel Alimi

University of Sfax, ENIS, REGIM-Lab., Research Groups on Intelligent Machines, Tunisia

Special Session M23: Fuzzy Logic Systems for Security and Forensics
Monday, July 9, 2:10PM-4:10PM, Room: Galapagos II, Chair: Longzhi Yang and Leslie Sikos

2:10PM   Honeypots That Bite Back: A Fuzzy Technique for Identifying and Inhibiting Fingerprinting Attacks on Low Interaction Honeypots [#18204]

Nitin Naik, Paul Jenkins, Roger Cooke and Longzhi Yang

Ministry of Defence, United Kingdom; Northumbria University, United Kingdom

2:30PM   Grooming Detection using Fuzzy-Rough Feature Selection and Text Classification [#18309]

Zheming Zuo, Jie Li, Philip Anderson, Longzhi Yang and Naik Nitin

Northumbria University, United Kingdom; Defence School of Communications of Information Systems, United Kingdom

2:50PM   Weighted Fuzzy Rules Optimised by Particle Swarm for Network Intrusion Detection [#18050]

Tianhua Chen, Pan Su, Changjing Shang and Qiang Shen

Department of Computer Science, School of Computing and Engineering, University of Huddersfield, United Kingdom; School of Control and Computer Engineering, North China Electric Power University, China; Department of Computer Science, Institute of Mathematics, Physics and Computer Science, Aberystwyth University, United Kingdom

3:10PM   Inconsistency Measure Associated Discretization Methods to Network-based Intrusion Detection [#18107]

Zhao Rong, Qu Yanpeng, Deng Ansheng and Zwiggelaar Reyer

Dalian Maritime University, China; Aberystwyth University, United Kingdom

3:30PM   Network Intrusion Detection Using Kernel-based Fuzzy-rough Feature Selection [#18108]

Zhang Qiangyi, Qu Yanpeng and Deng Ansheng

Dalian Maritime University, China

3:50PM   Unsupervised Learning for Trustworthy IoT [#18306]

Nikhil Banerjee, Thanassis Giannetsos, Emmanouil Panaousis and Clive Cheong Took

University of Surrey, United Kingdom

Session M24: Optimization and Operations Research
Monday, July 9, 2:10PM-4:10PM, Room: Galapagos III, Chair: Jose Luis Verdegay and David Pelta

2:10PM   A variant to the dynamic adaptation of parameters in galactic swarm optimization using a fuzzy logic augmentation [#18111]

Emer Bernal, Oscar Castillo, Jose Soria, Fevrier Valdez and Patricia Melin

Tijuana Institute of Technology, Mexico

2:30PM A New Approach for Solving Personalized Routing Problems with Fuzzy Constraints [#18113]

Marina Torres, David A. Pelta and Maria Teresa Lamata

University of Granada, Spain

2:50PM Placing Wi-Fi Hotspots in Havana with Locations Availability based on Fuzzy Constraints [#18193]

Jenny Fajardo-Calderin, Maria T. Lamata, David A. Pelta, Cynthia Porras, Alejandro Rosete and Jose L. Verdegay

Universidad Tecnologica de La Habana Jose A. Echeverria (Cujae), Cuba; Universidad de Granada, Spain

3:10PM Nash Equilibrium Strategy for Non-cooperative Games with Interval Type-2 Fuzzy Payoffs [#18240]

Subrato Chakravorty and Debdas Ghosh

Indian Institute of Technology (Banaras Hindu University), India

3:30PM Learning Fuzzy Decision Trees using Integer Programming [#18263]

Jason Rhuggenaath, Yingqian Zhang, Alp Akcay, Uzay Kaymak and Sicco Verwer

Eindhoven University of Technology, Netherlands; Delft University of Technology, Netherlands

3:50PM A Novel Solution Approach for Fuzzy Linear Bilevel Multi-follower Programming Problems [#18339]

Taniya Seth and Pranab K Muhuri

South Asian University, India

Plenary Poster Session Poster1: FUZZIEEE Poster 1
Monday, July 9, 4:10PM-6:30PM, Room: Europa II, Chair: Bernadete Ribeiro

P101 A Novel Approach for Online Multivariable Evolving Fuzzy Modeling from Experimental Data [#18289]

Luis Torres and Ginalber Serra

IFMA, Brazil

P102 Fuzzy Kalman Filter Modeling Based on Evolving Clustering of Experimental Data [#18291]

Danubia Pires and Ginalber Serra

IFMA, Brazil

P103 A Dual Neural Network Based On Confidence Intervals For Fuzzy Random Regression Problems [#18049]

Hang Yu, Jie Lu, Guangquan Zhang and Dianshuang Wu

University of Technology Sydney, Australia

P104 Multi-objective Fuzzy Pattern Trees [#18120]

Anderson Santos, Jorge Amaral, Carlos Soares and Adriano Barros

Universidade do Estado do Rio de Janeiro, Brazil

P105 SaaS E-Commerce Platforms Web Accessibility Evaluation [#18070]

Osama Sohaib, Mohsen Naderpour and Walayat Hussain

University of Technology Sydney (UTS), Australia

P106 A Fuzzy Sociometric Approach to Human Resource Allocation [#18089]

Iago Egias and Renato Krohling

Federal University of Espirito Santo, Brazil

P107 A fuzzy inference system for disturbance classification in power distribution networks using a low-cost PMU [#18081]

Andre Sanches Fonseca Sobrinho, Rogerio Andrade Flauzino, Luisa H. B Liboni, Eduardo C. Maques Costa and Danilo Hernane Spatti

Federal University of Technology - Parana, Brazil; University of Sao Paulo, Brazil; Federal Institute of Education, Science, and Technology of Sao Paulo, Brazil

Session M31: Decision Making
Monday, July 9, 4:30PM-6:30PM, Room: Aruba II-III, Chair: Camilo Rios and Tomoe Entani

4:30PM Build a Practical Evacuation Contraflow Model for Natural Disasters by Using Fuzzy Inference System [#18005]

Ying Bai and Hang Chen

Johnson C. Smith university, United States

4:50PM A Fuzzy Weight Vector From a Group of Crisp Pairwise Comparison Matrices. [#18019]

Tomoe Entani

University of Hyogo, Japan

5:10PM Ranking fuzzy priorities [#18146]

Camilo Franco

Andes University, Colombia

5:30PM Int-fGrid: BoT Tasks Scheduling Exploring Fuzzy Type-2 in Computational Grids [#18169]

Bruno Moura, Guilherme Schneider, Adenauer Yamin, Mauricio Pilla and Renata Reiser

Federal University of Pelotas (UFPEL), Brazil

5:50PM Crowd Intelligence for Decision Making Based on Positive and Negative Comparing With Linguistic Scale [#18213]

Zhang Hengshan, Zheng Qinghua, Wang Zhongmin, Chen Yanping, Qu Yu and Liu Ting

School of Computer Science, Xian University of Posts and Telecommunications, China; Department of Computer Science and Technology, Xian Jiaotong University, China

6:10PM A Content-Based Recommendation System Using Neuro-Fuzzy Approach [#18313]

Tomasz Rutkowski, Jakub Romanowski, Piotr Woldan, Pawel Staszewski, Radoslaw Nielek and Leszek Rutkowski

Senfino Technologies, Poland; Polish-Japanese Academy of Information Technology, Poland; Czestochowa University of Technology, Poland

Session M32: Fuzzy Logic and Reasoning
Monday, July 9, 4:30PM-6:30PM, Room: Galapagos I, Chair: Michal Baczynski and Krystian Jobczyk

4:30PM On the T-power Inverse Invariance Property on Fuzzy Implication Functions [#18237]

Michal Baczynski, Sebastia Massanet and Joan Torrens

University of Silesia in Katowice, Institute of Mathematics, Poland; University of the Balearic Islands, Spain

4:50PM An epistemic Halpern-Shoham logic for gradable justification [#18304]

Krystian Jobczyk and Antoni Ligeza

University of Caen/AGH University of Science and Technology, Poland; AGH University of Science and Technology, Poland

5:10PM n-Dimensional Intervals and Fuzzy S-implications [#18173]

Rosana Zanotelli, Renata Reiser and Benjamin Bedregal

Federal University of Pelotas, Brazil; Federal University of Rio Grande do Norte, Brazil

5:30PM An Efficient Proximity-based Unification Algorithm [#18076]

Pascual Julian-Iranzo and Fernando Saenz-Perez

University of Castilla-La Mancha, Spain; Universidad Complutense de Madrid, Spain

5:50PM Towards a Full Fuzzy Unification in the Bousi Prolog system [#18164]

Cornejo Maria Eugenia, Medina Moreno Jesus and Rubio-Manzano Clemente

University of Cadiz, Spain; University of the Bio-Bio, Chile

6:10PM (N',T,N)-Implications [#18159]

Jocivania Pinheiro, Benjamin Bedregal, Regivan H. N. Santiago and Helida Santos

Universidade Federal do Rio Grande do Norte, Universidade Federal Rural do Semi-Arido, Brazil; Universidade Federal do Rio Grande do Norte, Brazil

Special Session M33: Recent Advances in Lattice Computing
Monday, July 9, 4:30PM-6:30PM, Room: Galapagos II, Chair: Peter Sussner and George Papakostas

4:30PM On the Relation between Semifield-Valued FCA and the Idempotent Singular Value Decomposition [#18285]

Francisco Jose Valverde-Albacete and Carmen Pelaez-Moreno

Universidad Carlos III de Madrid, Spain

4:50PM Morphological-Linear Neural Network [#18069]

Gerardo Hernandez, Erik Zamora and Humberto Sossa

Instituto Politecnico Nacional - CIC, Mexico; Instituto Politecnico Nacional - UPIITA, Mexico

5:10PM Picture fuzzy sets and 3-fuzzy sets [#18074]

Erich Peter Klement, Radko Mesiar and Andrea Stupnanova

Department of Knowledge-Based Mathematical Systems, Johannes Kepler University Linz, Austria; Slovak University of Technology in Bratislava, Slovakia

5:30PM Linear versus Lattice Fuzzy Transforms: Image Algebra Representation, Observations, and Results in Image Denoising [#18307]

Peter Sussner and Tiago Schuster

University of Campinas, IMECC, Dept. of Applied Mathematics, Brazil

5:50PM Modeling in Cyber-Physical Systems by Lattice Computing Techniques: The Case of Image Watermarking Based on Intervals' Numbers [#18244]

George Papakostas and Vassilis Kaburlasos

Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece

Session M34: Fuzzy Set Theory and Foundations
Monday, July 9, 4:30PM-6:30PM, Room: Galapagos III, Chair: Renata Reiser and Benjamin Bedregal

4:30PM naBL-algebras based on overlaps and their conjugates [#18044]

Rui Paiva, Regivan Santiago, Benjamin Bedregal and Umberto Rivieccio

Federal Institute of Education, Science and Technology of Ceara - IFCE, Brazil; Federal University of Rio Grande do Norte - UFRN, Brazil

4:50PM Correlation coefficient analysis performed on duality and conjugate modal-level operators [#18170]

Alex Bertei and Renata Reiser

Federal University of Pelotas, Brazil

5:10PM Applications of Extremal Algebras and Fuzzy Logic [#18163]

Zuzana Nemcova and Martin Gavalec

University of Hradec Kralove, Czech Republic

5:30PM Moore Continuous n-Dimensional Interval Fuzzy Negations [#18224]

Ivan Mezzomo, Benjamin Bedregal and Thadeu Milfont

Rural Federal University of SemiArid - UFERSA, Brazil; Federal University of Rio Grande do Norte - UFRN, Brazil

5:50PM A Bidirectional Subsethood Based Similarity Measure for Fuzzy Sets [#18241]

Shaily Kabir, Christian Wagner, Timothy C. Havens and Derek T. Anderson

Intelligent Modelling and Analysis (IMA) Group and Lab for Uncertainty in Data and Decision Making (LUCID), School of Computer Science, University of Nottingham, Nottingham, UK, United Kingdom; Department of Electrical and Computer Engineering, Michigan Technological University, Houghton, MI, USA, United States; Department of Electrical Engineering and Computer Science, University of Missouri, Columbia, MO, USA, United States

Special Session T11: Fuzzy Models for Data Science and Big Data
Tuesday, July 10, 8:00AM-10:00AM, Room: Galapagos I, Chair: Alberto Fernandez and Mikel Galar

8:00AM Improving Fuzzy Rule Based Classification Systems in Big Data via Support-based Filtering [#18143]

Luis Iniguez, Mikel Galar and Alberto Fernandez

University of Granada, Spain; Public University of Navarre, Spain

8:20AM An evolutionary fuzzy rule-based system applied to real-world Big Data - the GEO-CRADLE and LUCAS soil spectral libraries [#18157]

Nikolaos Tsakiridis, John Theocharis and George Zalidis

Aristotle University of Thessaloniki, Greece

8:40AM A view of High Dimensional, Large-Scale and Big Data Fuzzy Rule based Regression and Control Systems [#18209]

Antonio Angel Marquez, Francisco Alfredo Marquez, Ana Maria Roldan and Antonio Peregrin

University of Huelva, Spain

9:00AM A preliminary study on Hybrid Spill-Tree Fuzzy k-Nearest Neighbors for big data classification [#18254]

Jesus Maillo, Julian Luengo, Salvador Garcia, Francisco Herrera and Isaac Triguero

University of Granada, Department of Computer Science and Artificial Intelligence. Granada, Spain., Spain; University of Nottingham, School of Computer Science. Nottingham, United Kingdom., England

Special Session T12: Business Processes and Fuzzy Logic
Tuesday, July 10, 8:00AM-10:00AM, Room: Galapagos II, Chair: Marta Cimitile and Mario Bernardi

8:00AM   A Fuzzy Clustering-based Approach to study Malware Phylogeny [#18293]

Giovanni Acampora, Mario Luca Bernardi, Marta Cimitile, Genoveffa Tortora and Autilia Vitiello

University of Napoli, Italy; Giustino Fortunato University, Italy; Unitelma Sapienza University, Italy; University of Salerno, Italy

8:20AM   Disaggregating Preferences for a Supplier Development Problem in the Mexican Aerospace Industry [#18122]

Pavel Alvarez Carrillo, Pereira Javier, Juan Carlos Leyva Lopez and Maria del Pilar Arroyo

Autonomous University of Occident, Mexico; Universidade Federal de Pernambuco, Brazil; Tecnologico de Monterrey, Mexico

8:40AM   Fuzzy Logic-Based Data Analytics on Predicting the Effect of Hurricanes on the Stock Market [#18315]

Richard Camara, Alfredo Cuzzocrea, Giorgio Grasso, Carson Leung, Steven Powell, Joglas Souza and Boyu Tang

University of Manitoba, Canada; University of Trieste, Italy; University of Messina, Italy

9:00AM   Cryptocurrencies Transactions Advisor Using a Genetic Mamdani-type Fuzzy Rules Based System [#18270]

Taiguara Melo Tupinambas, Rafael Aeraf Leao and Andre Paim Lemos

Federal University of Minas Gerais, Brazil; Cadence Design Systems, Brazil

9:20AM   Maximization of Returns under Value-at-Risk Constraints in Dynamic Fuzzy Asset Allocation [#18188]

Yuji Yoshida

University of Kitakyushu, Japan

Special Session T13: Uncertainty in Learning from Data
Tuesday, July 10, 8:00AM-10:00AM, Room: Galapagos III, Chair: Xizhao Wan and Ran Wang

8:00AM   Active Learning through Two-stage Clustering [#18028]

Wang Min, Fu Ke and Min Fan

Southwest Petroleum University, China

8:20AM   A Hybrid Fuzzy Petri Nets and Neural Networks Framework for Modeling Critical Infrastructure Systems [#18267]

Xiaoou Li and Wen Yu

CINVESTAV-IPN, Mexico

8:40AM   Entropy as Temporal Information Density [#18219]

Xiang Wu, Zejia Zheng and Juyang Weng

Nanjing University of Science and Technology, China; Michigan State University, United States

9:00AM   Fuzzy Clustering-based Anomaly Detection for Distributed Multi-view Data [#18181]

Hongmei Wang, Tianhua Chen, Hongtao Wang, Xuqiang Shao and Pan Su

North China Electric Power University, China; University of Huddersfield, United Kingdom

9:20AM   A New Type-2 Intuitionistic Exponential Triangular Fuzzy Number and Its Ranking Method with Centroid Concept and Euclidean Distance [#18037]

Salim Rezvani and Xizhao Wang

Shenzhen University, China

Plenary Talk Plenary2: On Decision and Optimization Models and Their Applications
Tuesday, July 10, 1:00PM-2:00PM, Room: Americas, Speaker: Jose Luis Verdegay

Session T21: Medicine and Biosystems
Tuesday, July 10, 2:10PM-4:10PM, Room: Galapagos I, Chair: Susana Vieira and Joao Sousa

2:10PM   Fuzzy Classification of Bariatric Post-surgery Effectiveness [#18148]

Aldo Arevalo, Ricardo Pacheco, Catia Salgado, Saskia van Loon, Arjen-Kars Boer, Susana Vieira, Uzay Kaymak and Joao Sousa

Instituto Superior Tecnico, Universidade de Lisboa, Portugal; Catharina Hospital, Clinical Chemistry, Netherlands; Industrial Engineering and Innovation Sciences, Eindhoven University of Technology, Netherlands

2:30PM   Fuzzy Approach to Grade Gliomas using Susceptibility-Weighted Images. A Preliminary Study [#18150]

Francesc Xavier Aymerich, Cristina Auger, Julio Garcia, Elena Martinez-Saez, Francisco Martinez-Ricarte, Juan Francisco Corral and Alex Rovira

MRI Unit (IDI) / Dept. of Automatic Control. Vall d'Hebron Hospital / UPC. Barcelona, Spain; MRI Unit (IDI). Vall d'Hebron Hospital. Barcelona, Spain; Pathology Department. Vall d'Hebron Hospital. Barcelona, Spain; Neurosurgery Department. Vall d'Hebron Hospital. Barcelona, Spain

2:50PM   A Fuzzy Model of Diagnosis and Treatment by Acupuncture Based on pulse symbols by Triple Cun - Guan - Chi of Traditional Oriental Medicine [#18214]

Hoang Phuonh Nguyen, Anh Nguyen and Thi Hong Thuy Truong

Thang Long University, Viet Nam; Auburn University, United States; Thai Nguyen University of Medicine and pharmacy, Viet Nam

3:10PM   Multi-scale Weighted Inherent Fuzzy Entropy for EEG Biomarkers [#18190]

Min Wang, Jiankun Hu and Hussein A. Abbass

University of New South Wales, Canberra, Australia, Australia

3:30PM   Fuzzy Membership-Driven Level Set for Automatic Kidney Segmentation from DCE-MRI [#18310]

Moumen El-Melegy, Rasha Abd El-karim, Ayman El-Baz and Mohamed Abou El-Ghar

Computer Vision Lab, Assiut University, Egypt; Math Department, Assiut University, Egypt; Bioengineering Department, University of Louisville, United States; Radiology Department, Mansoura University, Egypt

3:50PM   Intelligent Performance Assessment System for Laparoscopic Surgical Box-Trainer [#18131]

Janos Grantner, Aous Kurdi, Mohammed Al-Gailani, Ikhlas Abdel-Qader, Robert Sawyer and Saad Shebrain

Western Michigan University, United States; Western Michigan University, Iraq; Homer Stryker M.D. School of Medicine, Western Michigan University, United States

Special Session T22: Inter-Relation Between Interval, Fuzzy and Rough Techniques
Tuesday, July 10, 2:10PM-4:10PM, Room: Galapagos II, Chair: Martine Ceberio and Vladik Kreinovich

2:10PM   How to Detect Crisp Sets Based on Subsethood Ordering of Normalized Fuzzy Sets? How to Detect Type-1 Sets Based on Subsethood Ordering of Normalized Interval-Valued Fuzzy Sets? [#28002]

Christian Servin, Olga Kosheleva and Vladik Kreinovich

El Paso Community College, United States; University of Texas at El Paso, United States

2:30PM   Measures of Specificity Used in the Principle of Justifiable Granularity: A Theoretical Explanation of Empirically Optimal Selections [#28004]

Olga Kosheleva and Vladik Kreinovich

University of Texas at El Paso, United States

2:50PM   Interval-Valued Intuitionistic Fuzzy Inference System for Supporting Corporate Financial Decisions [#18025]

Petr Hajek and Vladimir Olej

University of Pardubice, Czech Republic

3:10PM   Context-aware Advertisment Recommendation on Twitter through Rough sets [#18118]

Stefania Boffa, Carmen De Maio, Brunella Gerla and Mimmo Parente

Dipartimento di Scienze Teoriche e Applicate, University of Insubria, Varese, 21100, Italy; Dipartimento di Ingegneria Dell'Informazione ed Elettrica e Matematica Applicata, University of Salerno, Fisciano, 84084, Salerno, Italy; Dipartimento di Scienze Aziendali - Management and Innovation Systems, University of Salerno, Fisciano, 84084, Salerno, Italy

3:30PM   Rough Neural Network Ensemble for Interval Data Classification [#18202]

Robert K. Nowicki, Marcin Korytkowski and Rafal Scherer

Czestochowa University of Technology, Poland

Session T23: Clustering II
Tuesday, July 10, 2:10PM-4:10PM, Room: Galapagos III, Chair: Francisco Carvalho and Frank Rhee

2:10PM   Fuzzy clustering Algorithm based on Adaptive City-block distance and Entropy Regularization [#18091]

Sara Ines Rizo Rodriguez and Francisco de Assis Tenorio de Carvalho

Universidade Federal de Pernambuco - UFPE, Brazil

2:30PM   Sequential Possibilistic One-Means Clustering with Dynamic Eta [#18047]

Wenlong Wu, James Keller and Thomas Runkler

University of Missouri, United States; Siemens AG, Germany

2:50PM   Automatic Detection of Computer Network Traffic Anomalies based on Eccentricity Analysis [#28006]

Rodrigo Siqueira Martins, Plamen Angelov and Bruno Sielly Jales Costa

Federal Institute of Rio Grande do Norte, Brazil; Lancaster University, United Kingdom

3:10PM   Fuzzy C-Means for Fraud Detection in Large Transaction Data Sets [#18226]

Christer Carlsson, Markku Heikkila and Xiaolu Wang

IAMSR/Abo Akademi University, Finland

3:30PM   An approach for fault diagnosis using a novel hybrid fuzzy clustering algorithm [#18249]

Adrian Rodriguez Ramos, Carlos Cruz Corona, Jose Luis Verdegay, Antonio J. Silva Neto and Orestes Llanes-Santiago

Universidad Tecnologica de La Habana Jose Antonio Echeverria, CUJAE, Cuba; Universidad de Granada, Spain; IPRJ/UERJ, Brazil

3:50PM   Performance Analysis of a Novel IT2 FCM Algorithm [#18299]

Shashank Anil Huddedar, Mayank Kagliwal, Badrinath Singhal and Frank Rhee

Indian Institute of Technology Guwahati, India; Hanyang University, Korea (South)

Plenary Poster Session Poster2: FUZZIEEE Poster 2
Tuesday, July 10, 4:10PM-6:30PM, Room: Europa II, Chair: Bernadete Ribeiro

P301 Evolving Methodology in Unobservable Components Space for Multivariate Time Series Forecasting [#18292]
Selmo Rodrigues Junior and Ginalber Serra
IFMA, Brazil

P302 A Soft Computing Fusion for River Flow Time Series Forecasting [#18345]
Thanh Nguyen, Ngoc Duy Nguyen, Saeid Nahavandi, Syed Moshfeq Salaken and Amin Khatami
Deakin University, Australia

P303 A Proposal by Using Fuzzy Vectors on the Study of Complex-Valued Channel Quantization [#18166]
Ricardo Watanabe, Cibele Trinca Watanabe and Estevao Esmi Laureano
IMECC - UNICAMP, Brazil; FEEC - UNICAMP, Brazil

P304 Wrapper-Based FIR Model Identification for Imbalance Data Classification [#18257]
Solmaz Bagherpour, Angela Nebot and Francisco Mugica
Universitat Politecnica de Catalunya (UPC-BarcelonaTech), Spain

P305 Clustering with Minimum Spanning Tree using TOPSIS with Multi-Criteria Information [#18121]
Jose Esgario and Renato Krohling
Federal University of Espirito Santo, Brazil

P306 Desired Compensation Based Adaptive Fuzzy Control for Hypersonic Vehicle with Measurement Noises [#18199]
Yifan Liu, Jianqiang Yi and Zhiqiang Pu
Institute of Automation, Chinese Academy of Sciences, China

Special Session T31: Linguistic Summarization and Description of Data
Tuesday, July 10, 4:30PM-6:30PM, Room: Galapagos I, Chair: Anna Wilbik and Marie-Jeanne Lesot

4:30PM Linguistic Summaries for Compliance Analysis of a Glucose Management Clinical Protocol [#18218]
Anna Wilbik, Irene Vanderfeesten, Dennis Bergmans, Serge Heines and Walther van Mook
TU/e, Netherlands; MUMC+, Netherlands

4:50PM An Approximation to Context-Aware Size Modeling for Referring Expression Generation [#18252]
Nicolas Marin, Gustavo Rivas-Gervilla and Daniel Sanchez
University of Granada, Spain

5:10PM Generating Textual Descriptions for Recommendation Results using Fuzzy Linguistic Summaries [#18314]
Szymon Lukasik, Mateusz Smet and Jaroslaw Krolewski
AGH University of Technology; Systems Research Institute, Polish Academy of Sciences; Synerise, Poland; AGH University of Technology, Poland; Synerise, Poland

Session T32: Robotics and Autonomous Systems
Tuesday, July 10, 4:30PM-6:30PM, Room: Galapagos II, Chair: Rainer Palm and Thiago Chagas

4:30PM   Fuzzy logic and control in Human-Robot Systems - geometrical and kinematic considerations [#18008]
Rainer Palm and Achim Lilienthal
Oerebro University, Sweden

4:50PM   Trajectory Tracking Control Based in Fuzzy Concepts [#18009]
Luiz Henrique Lopes de Almeida and Renato Aguiar
Centro Universitario FEI, Brazil

5:10PM   Group of Robots Inspired by Swarm Robotics Exploring Unknown Environments [#18095]
Patrick Prieto Soares, Lucas Botoni de Souza, Marcio Mendonca, Rodrigo H. C. Palacios and Jooo Paulo Lima Silva de Almeida
Federal University of Technology - Parana (UTFPR), Brazil; Federal University of Technology - Parana, Brazil; Federal Institute of Parana, Brazil

5:30PM   Fuzzy Maneuvering Controller applied to a Dynamic Model of a Differential Drive Mobile Robot [#18264]
Thiago de Almeida Ushikoshi, Kamilla Pereira Peixoto, Filipe Hamdan Sampaio Souto, Thiago Pereira das Chagas and Leizer Schnitman
Universidade Estadual de Santa Cruz, Brazil; Universidade Federal da Bahia, Brazil

5:50PM   Indoor RSSI-based Localization using Fuzzy Path Loss Models [#18191]
Simon Tomazic and Igor Skrjanc
Faculty of Electrical Engineering, University of Ljubljana, Slovenia

Special Session T33: Fuzzy Systems for Data Mining
Tuesday, July 10, 4:30PM-6:30PM, Room: Galapagos III, Chair: Mikel Galar and Alberto Fernandez

4:30PM   Extracting Rules for Black Jack Using Machine Learning and Fuzzy Systems [#18092]
Karla Cardoso, Marcos Cintra and Marcio Basgalupp
Fed. Territorial Univ. of the Semi-Arid, Brazil; Federal University of Sao Paulo, Brazil

4:50PM   Fuzzy Aggregation for Rule Selection in Imbalanced Datasets Classification using Choquet Integral [#18093]
Safa Abdellatif, Mohamed Ali Ben Hassine, Sadok Ben Yahia and Amel Bouzeghoub
University of Tunis El Manar, Faculty of Sciences of Tunis, LIPAH-LR11ES14, El Manar - 2092, Tunis, Tunisia; Institut Mines-TELECOM, TELECOM SudParis, UMR CNRS Samovar, 91011, Evry Cedex, France

5:10PM   An Approach for Extracting Frequent (Closed) Gradual Patterns Under Temporal Constraint [#18195]
Jerry Lonlac, Yannick Miras, Aude Beauger, Vincent Mazenod, Jean-Luc Peiry and Engelbert Mephu Nguifo
CRIL CNRS,UMR 8188, University Lille-Nord de France, Lens, France, France; HNHP, Musum National d'Histoire Naturelle, UMR 7194, France; CNRS, UMR 6042, GEOLAB, University Clermont Auvergne, Clermont-Ferrane, France; CNRS, UMR 6158, LIMOS, University Clermont Auvergne, AUBIERE, France, France

5:30PM   Optimal Feature Selection using Fuzzy Combination of Feature Subset for Transcriptome Data [#18234]
Vikas Singh, Harsh Vardhan, Nishchal K Verma and Yan Cui
IIT Kanpur, India; University of Tennessee, USA, United States

Panel Session Panel: Lotfi Zadeh
Tuesday, July 10, 4:30PM-6:30PM, Room: Europa IV, Chair: Rudolf Seising

Session W11: Interpretable Artificial Intelligence and Fuzzy Inference
Wednesday, July 11, 8:00AM-10:00AM, Room: Galapagos I, Chair: Luis Magdalena and Valerie Cross

8:00AM   Designing Interpretable Hierarchical Fuzzy Systems [#18082]
        Luis Magdalena
        Universidad Politecnica de Madrid, Spain

8:20AM   Comparing Similarity and Distance Based Fuzzy Inferencing Methods [#18180]
        Valerie Cross, Valeria Mokrenko and Shangye Chen
        Miami University, United States

8:40AM   Smart Fuzzy Cupper: Employing approximate reasoning to derive coffee bean quality scoring from individual attributes [#18006]
        Javier Livio, Wilfredo Flores, Rania Hodhod and David Umphress
        Author, United States; Coauthor, Honduras; Coauthor, United States

9:00AM   End-to-End Hierarchical Fuzzy Inference Solution [#18030]
        Begum Mutlu, Ebru A. Sezer and M. Ali Akcayol
        Gazi University, Turkey; Hacettepe University, Turkey

9:20AM   A Big-Bang Big-Crunch Type-2 Fuzzy Logic System for Generating Interpretable Models in Workforce Optimization [#18161]
        Ravikiran Chimatapu, Hani Hagras, Andrew Starkey and Gilbert Owusu
        University of Essex, United Kingdom; British Telecom, United Kingdom

9:40AM   Learning Fuzzy Relations and Properties for Explainable Artificial Intelligence [#18278]
        Regis Pierrard, Jean-Philippe Poli and Celine Hudelot
        CEA, France; CentraleSupelec, France

Session W12: Decision Analysis
Wednesday, July 11, 8:00AM-10:00AM, Room: Galapagos II, Chair: Rita Ribeiro and Skander Abdallah

8:00AM   Continuous Reinforcement Operator applied to Resilience in Disaster Rescue Networks [#18104]
        Javad J. Jassbi, Rita A. Ribeiro, Luis M. Camarinha-Matos, Jose Barata and Maria Isabel Gomes
        UNINOVA CTS, Portugal; FCT- Nova University, Portugal

8:20AM   Fuzzy Volatility Effect on Major Projects Timing [#18171]
        Skander Ben Abdallah and Issam Kouatli
        University of Quebec at Montreal, Canada; Lebanese American University, Lebanon

8:40AM   Application of Fuzzy Systems in Power Quality: Diagnosis of Total Harmonic Distortions [#18245]
        Diego Nolasco, Denis Alves, Flavio Costa, Eduardo Palmeira, Ricardo Ribeiro and Evandro Nunes
        Federal University of Rio Grande do Norte, Brazil; State University of Santa Cruz, Brazil

9:00AM

On Quantitative Interpretation of Fuzzy Quantified Propositions for User Preference Handling [#18269]

Nouredine Tamani and Yacine Ghamri-Doudane

L3i university of La Rochelle, France

9:20AM   FDA - Fuzzy Decision Analyzer [#18294]

Radomir Perzina, Ramik Jaroslav and Mielcova Elena

Silesian University in Opava, School of Business Administration, Czech Republic

9:40AM   A novel approach for student performance evaluation using consistency driven linguistic methodology [#18338]

Prashant Gupta and Pranab Muhuri

South Asian University, India

Special Session W13: Cyber Security and Mobility
Wednesday, July 11, 8:00AM-10:00AM, Room: Galapagos III, Chair: Francesco Mercaldo and Mario Bernardi

8:00AM   An Ensemble Fuzzy Logic Approach to Game Bot Detection through Behavioural Features [#18265]

Mario Luca Bernardi, Marta Cimitile, Fabio Martinelli and Francesco Mercaldo

Giustino Fortunato University, Italy; Unitelma Sapienza, Roma, Italy, Italy; National Research Council of Italy, Italy

8:20AM   A Novel Structural Entropy based Classification Technique for Supporting Android Ransomware Detection and Analysis [#18260]

Alfredo Cuzzocrea, Fabio Martinelli and Francesco Mercaldo

University of Trieste - ICAR-CNR, Italy; National Research Council of Italy, Italy

8:40AM   Not so Crisp Malware Fuzzy Classification of Android Malware Classes [#18242]

Francesco Mercaldo and Andrea Saracino

IIT-CNR, Italy

9:00AM   Online Spatio-Temporal Fuzzy Relations [#18281]

Jean-Philippe Poli, Laurence Boudet and Jean-Marie Le Yaouanc

CEA, France

9:20AM   Handling Uncertainty and Vagueness in Network Knowledge Representation for Cyberthreat Intelligence [#18017]

Leslie F. Sikos

University of South Australia, Australia

Plenary Talk Plenary3: Fuzzy Management of Data and Information Quality
Wednesday, July 11, 1:00PM-2:00PM, Room: Americas, Speaker: Bernadette Bouchon-Meunier

Special Session W21: Fuzzy Interpolation and Rule-Based Systems
Wednesday, July 11, 2:10PM-4:10PM, Room: Galapagos I, Chair: Laszlo Koczy and Qiang Shen

2:10PM   F-transform-Based Optimization for Image Restoration (Inpainting) [#18212]

Irina Perfilieva

IRAFM, Czech Republic

2:30PM   On Combining Fuzzy C-Regression Models and Fuzzy C-Means with Automated Weighting of the Explanatory Variables [#18105]

Ricardo A. M. da Silva and Francisco de A. T. de Carvalho

Universidade Federal de Pernambuco, Brazil

2:50PM   Interval Type-2 TSK+ Fuzzy Inference System [#18127]

Jie Li, Longzhi Yang, Xin Fu, Fei Chao and Yanpeng Qu

Northumbria University, United Kingdom; Xiamen University, China; Dalian Maritime University, China

3:10PM   Feature Ranking-Guided Fuzzy Rule Interpolation for Mammographic Mass Shape Classification [#18079]

Fangyi Li, Changjing Shang, Ying Li and Qiang Shen

Aberystwyth University, United Kingdom; Northwestern Polytechnical University, China

3:30PM   The effect of image feature qualifiers on fuzzy colorectal polyp detection schemes using KH interpolation - towards hierarchical fuzzy classification of coloscopic still images [#18255]

Szilvia Nagy, Brigita Sziova and Laszlo T Koczy

Szechenyi Istvan University, Hungary; Szechenyi Istvan University, Budapest University of Technology and Economics, Hungary

3:50PM   Quantum Implementation of Fuzzy Systems through Grover's Algorithm [#18320]

Giovanni Acampora, Federico Luongo and Autilia Vitiello

University of Naples Federico II, Italy; University of Salerno, Italy

Session W22: Fuzzy Neural Networks and Deep Learning
Wednesday, July 11, 2:10PM-4:10PM, Room: Galapagos II, Chair: Anca Ralescu and Uzay Kaymak

2:10PM   Adaptive hierarchical sliding mode control based on fuzzy neural network for an underactuated system [#18326]

Xiaorong Huang, Anca Ralescu, Hongli Gao and Juan Wen

Southwest Jiaotong of University, China; University of Cincinnati, United States

2:30PM   Towards More Specific Estimation of Membership Functions for Data-Driven Fuzzy Inference Systems [#18236]

Caro Fuchs, Anna Wilbik and Uzay Kaymak

Eindhoven University of Technology, Netherlands

2:50PM   A Sparse Bayesian Model for Random Weight Fuzzy Neural Networks [#18311]

Rosa Altilio, Antonello Rosato and Massimo Panella

University of Rome La Sapienza, Italy

3:10PM   Modified Convolutional Neural Network based on Adaptive Patch Extraction for Hyperspectral Image Classification [#18318]

Maissa Hamouda, Karim Saheb Ettabaa and Med Salim Bouhlel

SETIT, Tunisia; IMT ATLANTIQUE, France

3:30PM   A TOPSIS Multi-Criteria Decision Method-Based Function-Link Fuzzy CMAC Control System Design for Uncertain Nonlinear Systems [#18020]

Chih-Min Lin, Tuan-Tu Huynh and Ching-Chih Tsai

Yuan Ze University, Taiwan; National Chung-Hsing University, Taiwan

Special Session W23: Fuzzy Brain Analysis and Interfaces
Wednesday, July 11, 2:10PM-4:10PM, Room: Galapagos III, Chair: Mukesh Prasad and Javier Andreu

2:10PM

Sustain Attention Driving Task Analysis based on Recurrent Residual Neural Network using EEG Data [#18059]

Yurui Ming, Yu-Kai Wang, Mukesh Prasad, Dongrui Wu and Chin-Teng Lin

Centre for Artificial Intelligence, School of Software, FEIT, University of Technology Sydney, Australia; DataNova LLC, NY, United States

2:30PM A Fuzzy Genetic Algorithm for Optimal Spatial Filter Selection for P300-Based Brain Computer Interfaces [#18319]

David Achanccaray, Christian Flores, Christian Fonseca and Javier Andreu-Perez

Tohoku University, Japan; University of Engineering and Technology, Peru; University of Essex, United Kingdom

2:50PM P-300 and N-400 Induced Decoding of Learning-Skill of Driving Learners Using Type-2 Fuzzy Sets [#18335]

Lidia Ghosh, Amit Konar, Pratyusha Rakshit, Sricheta Parui, Anca L. Ralescu and Atulya K. Nagar

Jadavpur University, India; University of Cincinnati, United States; Liverpool Hope University, United Kingdom

3:10PM Hemodynamic Response Analysis for Mind-Driven Type-writing Using a Type 2 Fuzzy Classifier [#18341]

Mousumi Laha, Amit Konar, Pratyusha Rakshit, Lidia Ghosh, Susmita Chaki, Anca L. Ralescu and Atulya K. Nagar

Jadavpur University, India; University of Cincinnati, United States; Liverpool Hope University, United Kingdom

Special Session W31: Human Symbiotic Systems
Wednesday, July 11, 4:30PM-6:30PM, Room: Galapagos I, Chair: Tomohiro Yoshikawa and Yoichiro Maeda

4:30PM Effect of Sympathy Expression Methods by Educational-Support Robot using Facial Expression and Body Motion in Long Term Experiment [#18178]

Yuhei Tanizaki, Felix Jimenez, Tomohiro Yoshikawa, Takeshi Furuhashi and Masayoshi Kanoh

Graduate School of Engineering Nagoya University, Japan; Engineering Chukyo University, Japan

4:50PM Sympathy-Expression Method for Educational-Support Robots Based on Writing Times [#18182]

Kenshi Ota, Felix Jimenez, Tomohiro Yoshikawa and Takeshi Furuhashi

Graduate School of Engineering Nagoya University, Japan

5:10PM Effect of Educational-Support Robot Based on Cognitive Apprenticeship Theory [#18183]

Kenya Miyauchi, Felix Jimenez, Tomohiro Yoshikawa and Takeshi Furuhashi

Graduate School of Engineering Nagoya University, Japan

5:30PM Correcting Pointing Position of Fingers by Using Inclusion-Exclusion Integral [#18189]

Yuya Aikawa, Kento Motoyama, Masayoshi Kanoh, Tsuyoshi Nakamura and Yoshikazu Yano

Chukyo University, Japan; Nagoya Institute of Technology, Japan; Aichi Institute of Technology, Japan

5:50PM Human-Robot Interaction Experiment Based on Markovian Emotional Model [#18200]

Yoichiro Maeda

Ritsumeikan University, Japan

Special Session W32: Fuzzy Technologies for Web Intelligence and Internet of Things
Wednesday, July 11, 4:30PM-6:30PM, Room: Galapagos II, Chair: Marek Reformat and Christian Wagner

4:30PM   Multi-level Processing of Sensory Data with Evidence Theory [#18312]
       Marek Z. Reformat, Ronald R. Yager and Majid RobatJazi
       University of Alberta, Canada; Iona College, United States

4:50PM   Fuzzy Logic As-a-Service for Ambient Intelligence Environments [#18155]
       Amir Pourabdollah, Christian Wagner, Giovanni Acampora and Ahmad Lotfi
       Nottingham Trent University, United Kingdom; University of Nottingham, United Kingdom; University of Naples Federico II, Italy

5:10PM   Ontology-based Adaptive e-Textbook Platform for Student and Machine Co-Learning [#18056]
       Noel Nuo Wi Tay, Sheng-Chi Yang, Chang-Shing Lee and Naoyuki Kubota
       Center for Research of Knowledge Application and Web Service, National University of Tainan, Taiwan; Dept. of Computer Science and Information Engineering, National University of Tainan, Taiwan; Graduate School of System Design, Tokyo Metropolitan University, Japan

5:30PM   Automatic Address Aassigning Problem in Smart Homes [#18220]
       David Sec, Dalibor Cimr, Jan Stepan, Richard Cimler and Jitka Kuhnova
       Faculty of Informatics and Management, University of Hradec Kralove, Czech Republic; Faculty of Science, University of Hradec Kralove, Czech Republic

Special Session W33: Fuzzy Systems on Renewable Energy and Smart Grid
Wednesday, July 11, 4:30PM-6:30PM, Room: Galapagos III, Chair: Marco Mussetta and Francesco Grimaccia

4:30PM   Modeling and Performance Evaluation of a Fuzzy Logic Controller for Buck-Boost DC/DC Converters [#18322]
       Minh Quan Duong, Kim Hung Le, Grimaccia Francesco, Leva Sonia and Mussetta Marco
       University of Da Nang, Viet Nam; Politecnico di Milano, Italy

4:50PM   A Robust Predictive Control Strategy for Building HVAC Systems Based on Interval Fuzzy Models [#18119]
       Oscar Cartagena, Diego Munoz-Carpintero and Doris Saez
       University of Chile, Chile

5:10PM   Uncertainty management for classification and benchmarking of energy-use preference profiles [#18135]
       Camilo Franco, Kurt Nielsen and Pieter Kerstens
       Andes University, Colombia; Copenhagen University, Denmark

5:30PM   Comparison of Three Techniques for Maximum Power Point Tracking of Solar PV [#18336]
       Arnold Sagonda and Komla Agbenyo Folly
       University of Cape Town, South Africa

Session Th11: Modeling and Control
Thursday, July 12, 8:00AM-10:00AM, Room: Galapagos I, Chair: Marcelo Minhoto and Qianying Chen

8:00AM On Switched Control of Discrete-Time Takagi-Sugeno Fuzzy Systems with Unknown Membership Functions [#18123]

Diogo Ramalho de Oliveira, Gilberto Rodrigues dos Santos, Marcelo Carvalho Minhoto Teixeira, Edvaldo Assuncao, Rodrigo Cardim and Uiliam Nelson Lendzion Tomaz Alves

IFMS - Federal Institute of Education, Science and Technology of Mato Grosso do Sul, Campus of Tres Lagoas, Brazil; UFMS - Federal University of Mato Grosso do Sul, Campus of Pantanal, Brazil; UNESP - Sao Paulo State University, School of Engineering, Department of Electrical Engineering, Ilha Solteira, Brazil; IFPR - Federal Institute of Education, Science and Technology of Parana, Campus of Jacarezinho, Brazil

8:20AM Entropy Fuzzy System Identification for the Dynamics of the Dragonfly-like Flapping Wing Aircraft [#18031]

Fendy Santoso, Matthew Garratt, Sreenatha Anavatti and Osama Hassanein

The University of New South Wales, Australia; Abu Dhabi Polytechnic, United Arab Emirates

8:40AM A Novel Takagi-Sugeno Fuzzy System Modeling Method with Joint Feature Selection and Rule Reduction [#18073]

Lin Defu, Wang Jun, Zhu Jihua, Wang Yifan, Li Weiwei, Jiang Yizhang, Deng Zhaohong and Wang Shitong

School of Digital Media, Jiangnan University, China; School of Software Engineering, Xi'an Jiaotong University, China; College of Astronautics, Nanjing University of Aeronautics and Astronautics, China

9:00AM Delay-Partitioning Approach to State and Sensor/Actuator Fault Estimation for T-S Fuzzy Systems with Time-Delay [#18098]

Dhouha Kharrat, Hamdi Gassara, Ahmed El Hajjaji and Mohamed Chaabane

University of Picardie Jules Verne, France; National school of Engineering of Sfax, Tunisia

9:20AM Enhancement of Dynamical Characteristics of a Fuzzy Control System by Using Unstable Subsystem [#18129]

Andriy Lozynskyy, Vladimir Vantsevitch and Lyubomyr Demkiv

National University "Lviv Polytechnic", Ukraine; The University of Alabama at Birmingham, United States

Session Th12: Social, Communication Networks, and Security
Thursday, July 12, 8:00AM-10:00AM, Room: Galapagos II, Chair: Leslie Sikos and Longzhi Yang

8:00AM Fuzzy Logic Aided Intelligent Threat Detection in Cisco Adaptive Security Appliance 5500 Series Firewalls [#18203]

Nitin Naik, Paul Jenkins, Brian Kerby, Joseph Sloane and Longzhi Yang

Ministry of Defence, United Kingdom; Northumbria University, United Kingdom

8:20AM An ANEW based Fuzzy Sentiment Analysis Model [#18301]

Andres Montoro, Jose A. Olivas, Arturo Peralta, Francisco P. Romero and Jesus Serrano-Guerrero

Prometeus Global Solutions, Spain; Univ. of Castilla-La Mancha, Spain

8:40AM Sensitive Analysis of Timeframe Type and Size Impact on Community Evolution Prediction [#18274]

Narimene Dakiche, Fatima Benbouzid-Si Tayeb, Yahya Slimani and Karima Benatchba

Ecole nationale Superieure d'Informatique (ESI), Algeria; Computer Science Department, ISAMM Institute of Manouba, Tunisia

9:00AM New Solution based on Fuzzy System for the IA-RMLSA Problem in Elastic Optical Network [#18130]

Enio Barbosa, Andre Soares, Vinicius Machado, Ricardo Rabelo and Jose Reis Junior

Federal University of Piaui (UFPI), Brazil

9:20AM Continuous Biometric Authentication using Possibilistic C-Means [#18272]

Matheus Santos and Mauricio Pamplona Segundo

Federal University of Bahia, Brazil

Special Session Th13: Tyoe-2 Fuzzy Sets in Emerging Systems
Thursday, July 12, 8:00AM-10:00AM, Room: Galapagos III, Chair: Patricia Melin and Pranab Muhuri

8:00AM A new variant of Fuzzy K-Nearest Neighbor using Interval Type-2 Fuzzy Logic [#18176]

Patricia Melin, Eduardo Ramirez and German Prado-Arechiga

Tijuana Institute of Technology, Mexico; Cardio-Diagnostico, Mexico

8:20AM Evolutionary Extreme Learning Machine for the Interval Type-2 Radial Basis Function Neural Network: A Fuzzy Modelling Approach [#18153]

Adrian Rubio-Solis, Uriel Martinez-Hernandez and George Panoutsos

The University of Sheffield, United Kingdom; University of Bath, United Kingdom

8:40AM Determining the Optimal Fuzzifier Range for Alpha-Planes of General Type-2 Fuzzy Sets [#18229]

Shreyas Kulkarni, Rishabh Agrawal and Frank Rhee

Indian Institute of Technology Guwahati, India; Hanyang University, Korea (South)

9:00AM Exploring Constrained Type-2 Fuzzy Sets [#18271]

Pasquale D'Alterio, Jonathan Garibaldi and Amir Pourabdollah

University of Nottingham, United Kingdom; Nottingham Trent University, United Kingdom

9:20AM A Novel Image Steganography Approach Based on Interval Type-2 Fuzzy Similarity [#18333]

Zubair Ashraf, Mukul Lata Roy, Pranab K Muhuri and Q. M. Danish Lohani

South Asian University, India

9:40AM Linguistic operation time computation in parallel processor scheduling using the 2-tuple fuzzy representation model [#18344]

Prashant Gupta and Pranab Muhuri

South Asian University, India

Plenary Talk Plenary4: Decomposable Graphical Models: On Learning, Fusion, and Revision
Thursday, July 12, 1:00PM-2:00PM, Room: Americas, Speaker: Rudolf Kruse

Special Session Th21: Recent Advances in Fuzzy Control Systems Design and Analysis
Thursday, July 12, 2:10PM-4:10PM, Room: Galapagos I, Chair: Jun Yoneyama and Kevin Guelton

2:10PM

H-infinity Filter Design for Fuzzy Bilinear Systems with Unknown Inputs and Disturbances [#18128]

Jun Yoneyama

Aoyama Gakuin University, Japan

2:30PM   Output-Tracking Controller Design for Switched T-S Systems Subject to External Disturbances [#18102]

Dalel Jabri, Kevin Guelton, Djamel Eddine Chouaib Belkhiat and Noureddine Manamanni

Ferhat Abbas University Setif 1, Algeria; CReSTIC EA3804 - University of Reims Champagne-Ardenne, France

2:50PM   Finite Frequency Filter Design for T-S Fuzzy Continuous Systems [#18071]

Abderrahim El Amrani, Ahmed El Hajjaji, Abdelaziz Hmamed and Ismail Boumhidi

USMBA, Morocco; University of Picardie Jules Verne, France

3:10PM   Stability and controller design for T-S fuzzy discrete-time systems with time-varying delay in the state. [#18152]

Luis Silva, Valter Leite, Eugenio Castelan and Adriano Lopes

CEFET-MG, Brazil; UFSC, Brazil

3:30PM   Nonquadratic Stabilization Conditions for Time-Delay Nonlinear Systems in a Takagi-Sugeno Form [#18154]

Sara Angulo, David Vazquez, Raymundo Marquez and Miguel Bernal

Sonora Institute of Technology, Mexico

3:50PM   Lmi-Based Dynamic Control of Non-Affine Nonlinear Systems via Takagi-Sugeno Models [#18223]

Thierry Marie Guerra, Jeremie Guerra and Miguel Bernal

University of Valenciennes, France; Sonora Institute of Technology, Mexico

Session Th22: Image Processing and Understanding
Thursday, July 12, 2:10PM-4:10PM, Room: Galapagos II, Chair: Anasol Rios and Chaojie Ou

2:10PM   A Type-2 Fuzzy Logic Based System for Augmented Reality Visualisation of Georeferenced Data [#18158]

Anasol Pena Rios, Hani Hagras, Gilbert Owusu and Gardner Michael

University of Essex, United Kingdom; British Telecom, United Kingdom

2:30PM   Matrix resemblance functions for image comparison [#18207]

Mikel Sesma-Sara, Laura De Miguel, Mesiar Radko and Bustince Humberto

Universidad Publica de Navarra, Spain; Slovak University of Technology, Slovakia

2:50PM   Evolving Background Subtraction for Dynamic Lighting Scenarios [#18283]

Bruno Costa and Madeline Goh

Ford Motor Company, United States

3:10PM   Driver Behavior Monitoring Using Tools of Deep Learning and Fuzzy Inferencing [#18297]

Chaojie Ou, Chahid Ouali, Safaa Bedawi and Fakhri Karray

University of Waterloo, Canada

3:30PM   Fuzzy Modelling of Local Linearity in Contours [#18308]

Jesus Chamorro-Martinez, Pedro Manuel Martinez-Jimenez, Antonio Garrido and Jose Manuel Soto-Hidalgo

University of Granada, Spain; University of Cordoba, Spain

3:50PM   Fuzzy NLG System for Extensive Verbal Description of Relative Positions [#18316]
Jesse Francis, Farhad Rahbarnia and Pascal Matsakis
University of Guelph, Canada; McGill University, Canada

Special Session Th23: Fuzzy Cognitive Maps
Thursday, July 12, 2:10PM-4:10PM, Room: Galapagos III, Chair: Giovanni Acampora and Autilia Vitiello

2:10PM   Fuzzy Reasoning in Cognitive Cities - An Exploratory Work on Fuzzy Analogical Reasoning Using Fuzzy Cognitive Maps [#18228]
Sara D'Onofrio, Stefan Markus Mueller, Elpiniki I. Papageorgiou and Edy Portmann
Human-IST Institute, University of Fribourg, Switzerland; TEI of Central Greece, Greece

2:30PM   On the Existence and Uniqueness of Fixed Points of Fuzzy Set Valued Sigmoid Fuzzy Cognitive Maps [#18251]
Istvan Harmati and Laszlo Koczy
Szechenyi Istvan University, Hungary

2:50PM   Fuzzy Cognitive Maps and Fuzzy Logic applied in Industrial Processes Control [#18084]
Lucas Botoni de Souza, Patrick Prieto Soares, Marcio Mendonca, Asmaa Mourhir and Elpiniki I. Papageorgiou
Federal University of Technology - Parana (UTFPR), Brazil; School of Sciences and Engineering Al Akhawayn University Ifrane, Morocco, Morocco; Computer Engineering Department Technological Educational Institute of Sterea Ellada Lamia, Greece, Greece

3:10PM   Aggregate Experts Knowledge in Fuzzy Cognitive Maps [#18141]
Giovanni Mazzuto, Maurizio Bevilacqua, Chrysostomos Stylios and Voula C. Georgopoulos
Universita Politecnica delle Marche, Italy; Educational Institute of Epirus, Greece; School Health and Welfare Professions TEI of Western Greece, Greece

3:30PM   Fuzzy Cognitive Maps Designing through Large Dataset and Experts' Knowledge Balancing [#18142]
Giovanni Mazzuto, Filippo E. Ciarapica, Chrysostomos Stylios and Voula C. Georgopoulos
Universita Politecnica delle Marche, Italy; Educational Institute of Epirus, Greece; School Health and Welfare Professions TEI of Western Greece, Greece

Session Th31: Fuzzy Differential Equations
Thursday, July 12, 4:30PM-6:30PM, Room: Galapagos I, Chair: Estevao Esmi and Fakhreddine

4:30PM   Finite Time Synchronization For Delayed Fuzzy Inertial Cellular Neural Networks [#18215]
Chaouki Aouiti, El Abed Assali and Fakhreddine Karray
University of Carthage, Faculty of Sciences of Bizerta, Department of Mathematics Mathmatiques et applications UR13ES47, BP W, 7021 Zarzouna, Bizerta,, Tunisia; PAMI: Pattern Analysis and Machine Department of Electrical and Computer Engineering University of Waterloo, Ont.,, Canada

4:50PM   New Results on Neutral Type Fuzzy Based Cellular Neural Networks [#18217]
Chaouki Aouiti, Farah Dridi and Fakhreddine Karray

University of Carthage, Faculty of Sciences of Bizerta, Department of Mathematics Mathmatiques et applications UR13ES47, BP W, 7021 Zarzouna, Bizerta,, Tunisia; PAMI: Pattern Analysis and Machine Department of Electrical and Computer Engineering University of Waterloo, Ont.,, Canada

5:10PM Linear Ordinary Differential Equations with Linearly Correlated Boundary Values [#18268]

Daniel Sanchez, Estevao Esmi and Barros Laecio

University of Campinas, Chile; University of Campinas, Brazil

Special Session Th32: Software for Soft Computing
Thursday, July 12, 4:30PM-6:30PM, Room: Galapagos II, Chair: Jose Soto-Hidalgo and Autilia Vitiello

4:30PM Interoperability for Embedded Systems in JFML Software: An Arduino-based implementation [#18225]

Francisco Jesus Arcos, Jose Manuel Soto-Hidalgo, Autilia Vitiello, Giovanni Acampora and Jesus Alcala-Fdez

University of Granada, Spain; University of Cordoba, Spain; University of Salerno, Italy; University of Naples Federico II, Italy

4:50PM Exploring Subsethood to Determine Firing Strength in Non-Singleton Fuzzy Logic Systems [#18286]

Direnc Pekaslan, Jonathan M. Garibaldi and Christian Wagner

University of Nottingham, United Kingdom

5:10PM FASILL: Fuzzy Correct Answers and Soundness [#18023]

Pascual Julian-Iranzo, Gines Moreno and Jaime Penabad

University of Castilla-La Mancha, Spain

5:30PM SyFSeL: Generating Synthetic Fuzzy Sets Made Simple [#18198]

Josie McCulloch

University of Nottingham, United Kingdom

5:50PM MeetCI: A computational intelligence software design automation framework [#18016]

Igor Khokhlov, Chinmay Jain, Ben Miller-Jacobson, Andrew Heyman, Leonid Reznik and Robert St.Jacques

Rochester Institute of Technology, United States

6:10PM A Possibilistic I/O Hidden Semi-Markov Model For Assessing Cyber-Physical Systems Effectiveness [#18222]

Gerald Rocher, Jean-Yves Tigli, Stephane Lavirotte and Nhan Le Thanh

Universite Nice Cote d'azur, GFI Informatique, France; Universite Nice Cote d'azur, CNRS, France

Special Session Th33: Handling Uncertainties in Big Data by Fuzzy Systems
Thursday, July 12, 4:30PM-6:30PM, Room: Galapagos III, Chair: Dianshuang Wu and Jie Lu

4:30PM Unconstrained Fuzzy Feature Fusion for Heterogeneous Unsupervised Domain Adaptation [#18066]

Feng Liu, Guangquan Zhang and Jie Lu

Decision Systems and e-Service Intelligence (DeSI) Lab, Centre for Artificial Intelligence, Faculty of Engineering and Information Technology University of Technology Sydney, Australia

4:50PM

A Self-adaptive Fuzzy Network for Prediction in Non-stationary Environments [#18110]

Yiliao Song, Guangquan Zhang, Haiyan Lu and Jie Lu

Centre for Artificial Intelligence,University of Technology Sydney, Australia

5:10PM Handling Uncertainty in Social Lending Credit Risk Prediction with a Choquet Fuzzy Integral Model [#18134]

Anahita Namvar and Mohsen Naderpour

CAI, University of Technology Sydney, Australia

Session F11: Applications
Friday, July 13, 8:00AM-10:00AM, Room: Galapagos I, Chair: Andrei Petrovski and Luiz Carpinetti

8:00AM Fuzzy Data Analysis Methodology for the Assessment of Value of Information in the Oil and Gas Industry [#18029]

Martin Vilela, Gbenga Oluyemi and Andrei Petrovski

Robert Gordon University, United Kingdom

8:20AM Topological Mapping using Fuzzy Systems for Place Recognition [#18296]

Francisco Bruno de Sousa Rocha, Ranulfo Plutarco Bezerra Neto, Wilson Leal Rodrigues Junior, Dyogo Medeiros Reis, Ricardo de Andrade Lira Rabelo, Andre Macedo Santana and Joao Guilherme C Costa

Federal University Piaui, Brazil; Federal University of Piaui, Brazil; Federal University of Piaui (UFPI), Brazil

8:40AM Fuzzy Cognitive Maps and Grey Systems Theory in the Supply Chain Management Context: a literature review and a research proposal [#18054]

Lucas Gabriel Zanon and Luiz Cesar Ribeiro Carpinetti

University of Sao Paulo, Brazil

9:00AM Hesitant Fuzzy Linguistic Term Sets for Group Decision Making in Supplier Performance Evaluation [#18334]

Taniya Seth, Prashant K Gupta and Pranab K Muhuri

South Asian University, India

9:20AM Fuzzy Modeling for Predicting Patient Survival Rate in ICU with AKI [#18328]

Andre Silva, Clara Correia, Catia Salgado, Stan Finkelstein, Leo Celi, Joao Sousa and Susana Vieira

Institute of Mechanical Engineering, Instituto Superior Tecnico, Portugal; Engineering Systems, Massachusets Institute of Technology, Cambridge, United States; Laboratory of Computational Phisiology, Massachusets Institute of Technology, Cambridge, United States

Special Session F12: Advances to Type-2 Fuzzy Logic Control
Friday, July 13, 8:00AM-10:00AM, Room: Galapagos II, Chair: Tufan Kumbasar and Erdal Kayacan

8:00AM Single Vs. Double Input Interval Type-2 Fuzzy PID Controllers: Which One is Better? [#18057]

Aykut Beke and Tufan Kumbasar

Istanbul Technical University, Turkey

8:20AM Analyzing the Control Surfaces of Type-1 and Interval Type-2 FLCs through an Experimental Study [#18185]

Ahmet Sakalli, Aykut Beke and Tufan Kumbasar

AVL Research and Engineering Turkey, Turkey; Istanbul Technical University, Turkey

8:40AM Less conservative conditions for stabilization of switched TS fuzzy systems using fuzzy Lyapunov functions [#18174]

Flavio Faria, Vilma Oliveira, Leandro Elias, Jorge Capela and Julia Tanaka

UNESP, Brazil; USP, Brazil; IFSP, Brazil

9:00AM On the Integral Action of Discrete-time Fuzzy TS Control Under Saturated Actuator [#18295]

Adriano Lopes, Valter Leite and Luis Silva

CEFET-MG / Campus Divinopolis, Brazil

9:20AM An Improvement of H_{∞} Filtering Design for T--S fuzzy Time-Varying Delay Systems: Input-Output Approach [#18167]

Hicham El Aiss, Taha Zoulagh, Abdelaziz Hmamed and Ahmed El Hajjaji

University of Sidi Mohamed Ben Abdellah,Faculty of Sciences Dhar El Mahraz-Fes, Morocco; University of Picardie Jules Vene, MIS Lab. UFR of Sciences, France

9:40AM Learning Type-2 Fuzzy Rule-Based Systems through Memetic Algorithms [#18321]

Giovanni Acampora, Pasquale D'Alterio and Autilia Vitiello

University of Naples Federico II, Italy; University of Nottingham, United Kingdom; University of Salerno, Italy

Session F13: Aggregation
Friday, July 13, 8:00AM-10:00AM, Room: Galapagos III, Chair: Javier Montero and Benjamin Bedregal

8:00AM Indexes for Necessity Queries. Implementation and Performance Evaluation on a Fuzzy Object-Relational Database Management System [#18012]

Juan Miguel Medina, Carlos David Barranco and Olga Pons

Granada University, Spain; Pablo de Olavide University, Spain

8:20AM Social index construction method based on consistent aggregation operator families [#18125]

Karina Rojas, Pablo Olaso, Jose Manuel Robles, Javier Montero and Daniel Gomez

URJC, Spain; CUNEF, Spain; UCM, Spain

8:40AM Directional and Ordered Directional Monotonicity of Generalized and Bounded Generalized Mixture Functions [#18196]

Antonio Farias, Claudio Callejas, Regivan Santiago and Benjamin Bedregal

UFERSA / UFRN, Brazil; UFERSA, Brazil; UFRN, Brazil

9:00AM On the cross-migrativity with respect to semi-t-operators [#18042]

Qin Feng

Jiangxi Normal University, China

Plenary Talk Plenary5: Fuzzy (F-) Transforms: The Efficient Tool for (Even Big) Data Preprocessing
Friday, July 13, 1:00PM-2:00PM, Room: Americas, Speaker: Irina Perfilieva

Special Session F21: Adaptive Nonlinear Fuzzy Control
Friday, July 13, 2:10PM-4:10PM, Room: Galapagos I, Chair: Horst Schulte and Chiang-Cheng Chiang

2:10PM	Integrated Fault Reconstruction and Fault-Tolerant Control of Nonlinear Systems in TS-Form [#18302]
	Horst Schulte
	University of Applied Sciences Berlin (HTW), Germany
2:30PM	Observer-Based Fuzzy Sliding Mode Control Of Nonlinear Uncertain Systems With Time Delay And Dead-Zone Input [#18085]
	Chiang-Cheng Chiang and Yi-Chun Li
	Tatung University, Taiwan
2:50PM	Model Reference Sliding Mode Control For Uncertain Underactuated Systems With Time Delay [#18086]
	Chiang-Cheng Chiang and Hsiang-Chih Lan
	Tatung University, Taiwan
3:10PM	Observer-Based Fuzzy Sliding Mode Control Approach For Uncertain Underactuated Nonlinear Systems With Time Delay [#18099]
	Chiang-Cheng Chiang and Ya-Ting Wu
	Tatung University, Taiwan
3:30PM	Design and experimental validation of adaptive fuzzy pid controller for a three degrees of freedom helicopter [#18055]
	Hernando Gonzalez, Joan Garcia, Alexander Angulo, Cristian Herrera and Carlos Arizmendi
	UNAB, Colombia

Session F22: Knowlege Management, Data Bases, and Information Retrieval
Friday, July 13, 2:10PM-4:10PM, Room: Galapagos II, Chair: Heloisa Camargo and Renata Reiser

2:10PM	Spatial Plateau Algebra: An Executable Type System for Fuzzy Spatial Data Types [#18284]
	Anderson Chaves Carniel and Markus Schneider
	University of Sao Paulo, Brazil; University of Florida, United States
2:30PM	Borders of Theories for Cooperative Querying over Uncertain Databases [#18262]
	Chourouk Belheouane, Stephane Jean, Brice Chardin, Allel Hadjali and Hamid Azzoune
	LRIA-USTHB, Algiers, Algeria; LIAS-Poitiers University, Poitiers, France; LIAS-ENSMA, Poitiers, France
2:50PM	Utilizing Probase in Open Directory Project-based Text Classification [#18210]
	So-Young Jun, Dinara Aliyeva, Ji-Min Lee and SangKeun Lee
	Korea University, Korea, Republic of

Session F23: Fuzzy Control
Friday, July 13, 2:10PM-4:10PM, Room: Galapagos III, Chair: Adriano Drumond and Ahmad Azar

2:10PM	Fuzzy Sliding-Mode Consensus Formation Control of Networked Heterogeneous Mecanum-Wheeled Multirobots with Dynamic Effects [#18177]
	Ching-Chih Tsai, Feng-Chun Tai and Kao-Hou Feng
	National Chung Hsing University,, Taiwan
2:30PM	A Distributed Control of Movements and Fuzzy Logic-Based Task Allocation for a Swarm of Autonomous Agents [#18179]

Pedro Lucas, Kleber Loayza and Enrique Pelaez

Escuela Superior Politecnica del Litoral (ESPOL), Ecuador

2:50PM A Novel Fuzzy Logic Control Method for Multi-Agent Systems with Actuator Faults [#18036]

Meng Joo Er, Chao Deng and Ning Wang

Nanyang Technological University, Singapore; Dalian Maritime University, China

Session F31: Clustering III
Friday, July 13, 4:30PM-6:30PM, Room: Galapagos I, Chair: Daniel Leite and Fernando Gomide

4:30PM Detection and Classification of Faults in Aeronautical Gas Turbine Engine: a Comparison Between two Fuzzy Logic Systems [#28019]

Mateus Gheorghe Ribeiro, Pedro Henrique Calderano, Renan Amaral, Ivan Menezes, Ricardo Tanscheit, Marley Vellasco and Eduardo Aguiar

Federal University of Juiz de Fora, Brazil; Pontifical Catholic University of Rio de Janeiro, Brazil

4:50PM A Novel Fuzzy Probabilistic Clustering Algorithm for Satellite Image Segmentation [#18300]

Luis Matilla, Yessenia Yari and Graciela Meza-Lovon

Universidad Nacional de San Agustin, Peru; Universidad Catolica San Pablo, Peru

5:10PM A Novel Intuitionistic Fuzzy Set Generator with Application to Clustering [#18331]

Meenakshi Kaushal, Rinki Solanki, Q.M. Danish Lohani and Pranab k. Muhari

South Asian University, India

5:30PM Nonlinear Dynamics Analysis of Short-Time Photoplethysmogram in Parkinson's Disease [#18216]

Tuan Pham and Mayumi Oyama-Higa

Linkoping University, Sweden; Chaos Technology Research Laboratory, Japan

Session F32: Classification
Friday, July 13, 4:30PM-6:30PM, Room: Galapagos II, Chair: Ricardo Tanscheit and Gracaliz Dimuro

4:30PM Applying Aggregation and Pre-Aggregation Functions in the Classification of Grape Berries [#18022]

Giancarlo Lucca, Jose Sanz, Humberto Bustince, Gracaliz Dimuro, Veronique Gomes, Rui Madureira and Pedro Melo-Pinto

Universidad Publica de Navarra, Spain; Universidade Federal do Rio Grande, Brazil; Universidade de Tras-os-Montes e Alto Douro, Portugal

4:50PM ECG Time Series Classification via Genetic-Fuzzy Approach Based on Accuracy-Interpretability Trade-Off Optimization [#18026]

Marian B. Gorzalczany and Filip Rudzinski

Kielce University of Technology, Department of Electrical and Computer Engineering, Poland

5:10PM Classification via Deep Fuzzy c-Means Clustering [#18184]

Scott Dick and Mojtaba Yeganejou

University of Alberta, Canada

5:30PM Material Classification from Imprecise Chemical Composition : Probabilistic vs Possibilistic Approach [#18246]

Arnaud Grivet Sebert and Jean-Philippe Poli

CEA - List, France

5:50PM Geo-FUZZ: Fuzzy-based Algorithm for Suspicious geo-tagged Tweets Detection [#18282]

Meryem Bendella, Feda Almuhisen and Mohamed Quafafou

Aix-Marseille University, France

6:10PM Classification of Short Circuit GMA Welding using Type-1 and Singleton Fuzzy Logic System [#18011]

Rafaela Abreu Campos, Renan Piazzaroli Finotti Amaral, Ivan Fabio Mota de Menezes, Leonardo Goliatt da Fonseca, Moises Luiz Lagares Junior and Eduardo Pestana de Aguiar

Federal University of Juiz de Fora, Brazil; Pontifical Catholic University of Rio de Janeiro, Brazil