

Sessions and papers

SS01 - Recent Advances in Evolving Fuzzy Systems

Chair: **E. Lughofer**

- 211 Nurfadhlina Mohd Sharef, Trevor Martin and Yun Shen
- 224 Gernot Herbst and Steffen F. Bocklisch
- 231 Laurent Hartert, Moamar Sayed Mouchaweh and Patrice Billaudel
- 217 Edwin Lughofer and Plamen Angelov
- 364 Gancho Vachkov

Friday, July 24, 14:20-16:00, Sala 2

- Minimal Combination for Incremental Grammar Fragment Learning
- Online Recognition of Fuzzy Time Series Patterns
- A Dynamic Classification Method for the Discrimination of Evolving Data
- Detecting and Reacting on Drifts and Shifts in On-Line Data Streams with Evolving Fuzzy Systems
- Online Classification of Machine Operation Modes Based on Information Compression and Fuzzy Similarity Analysis

SS02 - Advances in Soft Computing Applied to Databases and Information Systems - Part 1

Chair: **S. Zadrozny**

- 405 Henrik Bulskov and Troels Andreasen
- 111 Ludovic Liétard and Daniel Rocacher
- 243 Nicolás Marin, Carlos Molina, Olga Pons and M. Amparo Vila
- 366 Xiaohui Tang, Guoqing Chen and Qiang Wei
- 60 Patrick Bosc, Carmen Brando, Allel Hadjali, Hélène Jaudoin and Olivier Pivert

Tuesday, July 21, 10:10-11:50, Auditório 2

- On Conceptual Indexing for Data Summarization
- On the Definition of Extended Norms and Co-norms to Aggregate Fuzzy Bipolar Conditions
- Semantically-Driven Flexible Division in Fuzzy Object Oriented Models
- Introducing Relation Compactness for Generating a Flexible Size of Search Results in Fuzzy Queries
- Semantic Proximity Between Queries and the Empty Answer Problem

SS02 - Advances in Soft Computing Applied to Databases and Information Systems - Part 2

Chair: **G. De Tré**

- 208 Juan Miguel Medina, Sergio Jaime-Castillo, Carlos D. Barranco and Jesús R. Campaña
- 109 Amine Mokhtari, Olivier Pivert and Allel Hadjali
- 91 German Hurtado Martin, Chris Cornelis and Helga Naessens
- 7 Klaas Bosteels, Elias Pampalk and Etienne Kerre
- 319 Sławomir Zadrozny and Janusz Kacprzyk

Tuesday, July 21, 14:20-16:00, Auditório 2

- Flexible Retrieval of X-Ray Images Based on Shape Descriptors Using a Fuzzy Object-Relational Database
- Integrating Complex User Preferences into a Route Planner: A Fuzzy-Set-Based Approach
- Training a Personal Alert System for Research Information Recommendation
- On the Benefits of Representing Music Objects as Fuzzy Sets
- Bipolar Queries: An Approach and its Various Interpretations

SS02 - Advances in Soft Computing Applied to Databases and Information Systems - Part 3

Chair: **A. Hadjali**

- 221 Carlos Barranco and Sven Helmer
- 90 Henrik Legind Larsen
- 147 Antoon Bronselaer and Guy De Tre
- 89 Kobra Etmnani, Mohammad Reza Akbarzadeh Tootoonchi and Noorali Raeeji Yanehsari
- 136 Sadaaki Miyamoto, Yuichi Kawasaki and Keisuke Sawazaki

Tuesday, July 21, 16:20-18:00, Auditório 2

- Increasing the Performance of Fuzzy Retrieval Using Impact Ordering
- Multiplicative and Implicative Importance Weighted Averaging Aggregation Operators with Accurate Address Direction
- Semantical Evaluators
- Web Usage Mining: users' navigational patterns extraction from web logs using ant-based clustering method
- An Explicit Mapping for Kernel Data Analysis and Application to Text Analysis

SS03 - Fuzzy Transforms, Time Series and Other Applications - Part 1 F-Transforms

Chair: I. Perfilieva	Wednesday, July 22, 10:10-11:50, Sala 3
127 Luciano Stefanini	Fuzzy Transform and Smooth Functions
128 Irina Perfilieva and Martina Daňková	Towards F-transform of a Higher Degree
153 Martina Dankova and Martin Stepnicka	Approximation Properties of Inverse Fuzzy Transforms over the Residuated Lattice
14 Ferdinando di Martino, Vincenzo Loia and Salvatore Sessa	Multi-Dimensional Fuzzy Transforms for Attribute Dependencies
170 Barnabas Bede and Imre J. Rudas	Fuzzy Transforms, Korovkin Theorems and the Durrmeyer Operator

SS03 - Fuzzy Transforms, Time Series and Other Applications - Part 2 Time Series

Chair: M. Stepnicka	Wednesday, July 22, 16:20-18:00, Sala 3
432 David Martin, Domingo Miguel Guinea, Maria C. Garcia-Alegre and Domingo Guinea	Mining Linguistic Information for Configuring a Visual Surface Inspection System
105 Martin Stepnicka, Viktor Pavliska, Vilem Novak, Irina Perfilieva, Lenka Vavrickova and Iva Tomanova	Time Series Analysis and Prediction Based on Fuzzy Rules and the Fuzzy Transform
441 Peter Sussner, Rodolfo Miyasaki and Marcos Eduardo Valle	An Introduction to Parameterized IFAM Models with Applications in Prediction
178 Nadezhda Yarushkina, Tagir Unusov and Tatyana Afanasyeva	Fuzzy Tendency based Time Series Model for Forecasting Server Traffic
259 Daniel Graves and Witold Pedrycz	Multivariate Segmentation of Time Series with Differential Evolution

SS04 - Fuzzy and Possibilistic Optimization - Part 1

Chair: M. Inuiguchi	Wednesday, July 22, 10:10-11:50, Auditório 2
373 Mariano Jiménez, Amelia Bilbao, Mar Arenas and Maria Victoria Rodriguez-Uria	Repairing Infeasibility in Fuzzy Goal Programming
308 Ricardo C. Silva and Akebo Yamakami	Definition of Fuzzy Pareto-Optimality by Using Possibility Theory
71 Phantipa Thipwivatpotjana and Weldon Lodwick	The Use of Interval-Valued Probability Measures in Fuzzy Linear Programming: a constraint set approach
347 Ricardo C. Silva, Carlos Cruz and Akebo Yamakami	A Parametric Method to Solve Quadratic Programming Problems with Fuzzy Costs
335 A. David Baez-Sanchez	Two Results About Optimization of Fuzzy Variable Functions

SS04 - Fuzzy and Possibilistic Optimization - Part 2

Chair: Y. Yoshida	Wednesday, July 22, 12:00-13:00, Auditório 2
70 Heinrich Rommelfanger	Production and Transportation Planning — A fuzzy Approach for Minimizing the Total Cost
34 Yuji Yoshida	The Minimization of the Risk of Falling in Portfolios under Uncertainty
200 Masahiro Inuiguchi	A Semi-infinite Programming Approach to Possibilistic Optimization under Necessity Measure Constraints

SS05 - Fuzzy Differential Equations - Part 1**Chair: Y. Chalco-Cano**

- 163 Barnabas Bede and Luciano Stefanini
326 Muhammad Zaini Ahmad and Bernard De Baets
156 Yurilev Chalco-Cano, Heriberto Román-Flores and María Dolores Jiménez-Gamero
62 Rosana Motta Jafelice, Cesar Guilherme Almeida, João Frederico C. A. Meyer and Heraldo L. Vasconcelos
56 Marina R. B. Dias and Laécio C. Barros

Friday, July 24, 10:10-11:50, Auditório 2

- Numerical Solution of Interval Differential Equations with Generalized Hukuhara Differentiability
A Predator-Prey Model with Fuzzy Initial Populations
Fuzzy Differential Equation with n -Derivative
Dispersal of Leaf-Cutting Ants: fuzzy mathematical modeling, numerical approximation and simulations
Differential Equations based on Fuzzy Rules

SS05 - Fuzzy Differential Equations - Part 2**Chair: Y. Chalco-Cano**

- 61 Rosana M. Jafelice, Laécio C. Barros and Rodney C. Bassanezi
52 Heriberto Román-Flores, Yurilev Chalco-Cano and Geraldo Nunes-Silva
129 Jiri Kupka

Friday, July 24, 12:00-13:00, Auditório 2

- A Fuzzy Delay Differential Equation Model for HIV Dynamics
Chaos Induced by Turbulent and Erratic Functions
Some Chaotic and Mixing Properties of Zadeh's Extension

SS06 - Soft-computing for Web 2.0 and Semantic Web**Chair: M. Reformat**

- 395 Zhan Li, Ronald R. Yager and Marek Reformat
226 Trevor Martin and Yun Shen
327 Giuseppe Fenza, Vincenzo Loia and Sabrina Senatore
228 Veronika Vanekova and Peter Vojtas
277 Ernesto Damiani, Paolo Ceravolo and Marcello Leida

Thursday, July 23, 16:20-18:00, Auditório 2

- Identification of Web Information using Concept Hierarchies and On-line Updates of Concept Importance
Data Integration, Approximate Categorisation and Fuzzy Associations
Local Semantic Context Analysis for Automatic Ontology Matching
Fuzziness as a Model of User Preference in Semantic Web Search
A toward Framework for Generic Uncertainty Management

SS07 - Solvability of Fuzzy Relation Equations and Fuzzy Interpolation - Part 1 Solvability**Chair: S. Gottwald**

- 400 Irina Perfilieva
22 Xue-ping Wang and Feng Sun
271 Iman Mohammadi Ardehali and Milad Avazbeigi

Tuesday, July 21, 12:00-13:00, Sala 1

- Systems of Fuzzy Relation Equations in a Space with Fuzzy Preorder
Resolution of Fuzzy Relation Equations with Sup-Inf Composition over Complete Brouwerian Lattices — a review
A Generalized Numerical Solution for Fuzzy Relation Equations

SS07 - Solvability of Fuzzy Relation Equations and Fuzzy Interpolation - Part 2 Fuzzy Interpolation

Chair: M. Stepnicka
87 Siegfried Gottwald and Philipp Hüsam
95 Martin Stepnicka and Balasubramaniam Jayaram
424 Joan Jacas, Amadeu Monreal and Jordi Recasens

Wednesday, July 22, 12:00-13:00, Sala 3
Pointwise Defined CRI-Based Aggregation Distributive Operators Are Trivial
The Bandler-Kohout Subproduct as a Suitable Inference
Similarity Based Fuzzy Interpolation Applied to CAGD

SS08 - Aggregation Operators - Part 1

Chair: R. Mesiar
106 Aida Valls, Jordi Nin and Vicenç Torra
63 Balasubramaniam Jayaram and Michal Baczynski
287 Hoel Le Capitaine and Carl Frélicot
67 Humberto Bustince, Javier Fernandez, Radko Mesiar,
Javier Montero and Raul Orduna
341 Gleb Beliakov, Tomasa Calvo and Simon James

Thursday, July 23, 10:10-11:50, Sala 1
On the Use of Aggregation Operators for Location Privacy
Continuous R-Implications
Towards a Unified Logical Framework of Fuzzy Implications to Compare Fuzzy Sets
Overlap Index, Overlap Functions and Migrativity

Some Results on Lipschitz Quasi-Arithmetic Means

SS08 - Aggregation Operators - Part 2

Chair: T. Calvo
73 Isabel Aguiló, Jaume Suñer and Joan Torrens
124 Sebastià Massanet and Joan Torrens
142 Janos Fodor and Imre J. Rudas
269 Yasuo Narukawa and Vicenc Torra
23 Doretta Vivona and Maria Divari

Thursday, July 23, 14:20-16:00, Sala 1
A Characterization of Residual Implications Derived from Uninorms
Fuzzy Implications and the Weak Law of Importation
On Some Classes of Aggregation Functions that are Migrative
Continuous OWA Operator and its Calculation
Aggregation Operators for Conditional Crispness

SS09 - Fuzzy Sets in Computational Biology

Chair: U. Bodenhofer
46 Jan Baetens and Bernard De Baets
343 Ulrich Bodenhofer, Karin Schwarzbauer, Mihaela Ionescu
and Sepp Hochreiter
323 Thomas Fober and Eyke Huellermeier

Friday, July 24, 12:00-13:00, Sala 1
Incorporating Fuzziness in Spatial Susceptible-Infected Epidemic Models
Modeling Position Specificity in Sequence Kernels by Fuzzy Equivalence Relations

Fuzzy Modeling of Labeled Point Cloud Superposition for the Comparison of Protein Binding Sites

SS10 - Mathematical Fuzzy Logic - Part 1 Foundations

Chair: F. Esteva
113 Petr Cintula and Carles Noguera
92 Pilar Dellunde
384 Félix Bou, Francesc Esteva, Lluís Godo and Ricardo Oscar
Rodríguez
98 Libor Behounek
254 Thomas Vetterlein and Klaus-Peter Adlassnig

Tuesday, July 21, 10:10-11:50, Sala 1
An Abstract Approach to Fuzzy Logics: implicational semilinear logics
On Reduced Semantics for Fuzzy Predicate Logics
Characterizing Fuzzy Modal Semantics by Fuzzy Multimodal Systems with Crisp Accessibility Relations

Number-free Mathematics Based on T-norm Fuzzy Logic
T-norm-based Fuzzy Logics and Logics for Human Reasoning

SS10 - Mathematical Fuzzy Logic - Part 2 Algebraic Aspects**Chair: P. Cintula**

352 Vilem Novak and Martin Dyba
131 Milan Petřík and Peter Sarkoci
158 Brunella Gerla and Tomas Kroupa

Tuesday, July 21, 14:20-16:00, Sala 1

Non-Commutative EQ-Logics and Their Extensions
Associativity of Triangular Norms in Light of Web Geometry
Representation of States on MV-algebras by Probabilities on R-generated Boolean Algebras

SS10 - Mathematical Fuzzy Logic - Part 3 Knowledge Representation**Chair: C. Noguera**

318 Jiri Mockor
206 Ángel García-Cerdaña, Eva Armengol and Francesc Esteva

44 Fernando Bobillo and Umberto Straccia
334 Jeroen Janssen, Steven Schockaert, Dirk Vermeir and Martine De Cock
456 Hannes Strass, Susana Muñoz-Hernández and Victor Pablos Ceruelo

Wednesday, July 22, 10:10-11:50, Sala 1

Morphisms in Categories of Sets with Similarity Relations
On Triangular Norm Based Fuzzy Description Logics

Fuzzy Descriptions Logics with Fuzzy Truth Values
Fuzzy Answer Set Programming with Literal Preferences

Operational Semantics for a Fuzzy Logic Programming System with Defaults and Constructive Answers

SS11 - Machine Learning and Data Mining - Part 1 Machine Learning**Chair: D. Sanchez**

236 Julián Luengo and Francisco Herrera

219 Thomas Gabriel, Kilian Thiel and Michael Berthold
218 Alan Eckhardt and Peter Vojtas
205 Arne-Jens Hempel and Steffen F. Bocklisch
83 Javier Albusac, Jose Jesús Castro, Lorenzo Manuel López López, David Vallejo and Luis Jiménez

Tuesday, July 21, 10:10-11:50, Sala 2

On the use of Measures of Separability of Classes to Characterise the Domains of Competence of a Fuzzy Rule Based Classification System
Multi-Dimensional Scaling applied to Hierarchical Rule Systems
How to Learn Fuzzy User Preferences with Variable Objectives
Parametric Fuzzy Modelling Framework for Complex Data-Inherent Structures
Learning and Classification of Events in Monitored Environments

SS11 - Machine Learning and Data Mining - Part 2 Data Mining**Chair: E. Hüllermeier**

389 Carlos Molina, Daniel Sanchez, Jose-Maria Serrano and M. Amparo Vila
302 María Ros, Miguel Delgado and Amparo Vila
59 Miguel Delgado, M. Dolores Ruiz and Daniel Sanchez
223 Christian Borgelt and Xiaomeng Wang
328 Janusz Kacprzyk and Anna Wilbik

Tuesday, July 21, 14:20-16:00, Sala 2

Managing the Absence of Items in Fuzzy Association Mining

A Fuzzy Approach for the Model of Sliding Window. An Application to Behaviour Patterns Mining
A Restriction Level Approach for the Representation and Evaluation of Fuzzy Association Rules
SaM: A Split and Merge Algorithm for Fuzzy Frequent Item Set Mining
Using Fuzzy Linguistic Summaries for the Comparison of Time Series: an application to the analysis of investment fund quotations

SS12 - Type-2 Fuzzy Logic, Advances and Applications - Part 1**Chair: S. Greenfield**

117 Christian Wagner and Hani Hagraš

133 Hussam Hamrawi and Simon Coupland

20 John T. Rickard, Sam Hamilton and Wendy Hamilton

225 Sarah Greenfield, Francisco Chiclana and Robert John

155 Simon Miller, Viara Popova, Robert John and Mario

Gongora

Thursday, July 23, 10:10-11:50, Sala 3

Novel Methods for the Design of General Type-2 Fuzzy Sets based on Device Characteristics and Linguistic Labels Surveys

Type-2 Fuzzy Arithmetic using Alpha-planes

Type-2 Fuzzy Trust Aggregation

The Collapsing Method: Does the Direction of Collapse Affect Accuracy?

An Interval Type-2 Fuzzy Distribution Network

SS12 - Type-2 Fuzzy Logic, Advances and Applications - Part 2**Chair: I. B. Turksen**

345 Asli Celikyilmaz and I. Burhan Turksen

9 M. H. Fazel Zarandi, Marzie Zarinbal and I. B. Turksen

344 Juan R. Castro, Oscar Castillo, Patricia Melin, Antonio

Rodriguez-Diaz and Olivia Mendoza

102 Nils Rosemann, Werner Brockmann and Bastian Neumann

447 Esko Juuso

Thursday, July 23, 16:20-18:00, Sala 3

Spectral Learning with Type-2 Fuzzy Numbers for Question/Answering System

Type-II Fuzzy Possibilistic C-Mean Clustering

Universal Approximation of a Class of Interval Type-2 Fuzzy Neural Networks Illustrated with the Case of Non-linear Identification

Enforcing Local Properties in Online Learning First Order TS-fuzzy Systems by Incremental Regularization

Development of Multiple Linguistic Equation Models with Takagi-Sugeno Type Fuzzy Models

SS13 - Inter-relation Between Interval and Fuzzy Techniques**Chair: V. Kreinovich**

446 Eunjin Kim and Ladislav J. Kohout

346 Olga Kosheleva

313 Vladik Kreinovich and Hung Nguyen

99 Karen Villaverde and Olga Kosheleva

50 Carol Walker, Elbert Walker and Ronald Yager

Thursday, July 23, 10:10-11:50, Auditório 3

Multiple Negations in Fuzzy Interval Logic

Can We Learn Algorithms from People Who Compute Fast: an indirect analysis in the presence of fuzzy descriptions

Towards Intuitive Understanding of the Cauchy Deviate Method for Processing Interval and Fuzzy Uncertainty

Uncertainty Can Decrease Privacy: an observation

Generating Minimum Dispersion Densities from an Interval-Valued Fuzzy Set

SS14 - Advances in Soft Computing for Spatiotemporal Information Systems**Chair: R. Ribeiro**

372 Yi Qiang, Katrin Asmussen, Matthias Delafontaine, Birger Stichelbaut, Guy De Tre, Philippe De Maeyer and Nico Van

278 Matthias Steinbrecher and Rudolf Kruse

212 Gloria Bordogna, Paola Carrara, Marco Pagani, Monica

Pepe and Anna Rampini

253 Ahed Alboody, Florence Sedes and Jordi Inglada

348 Jozo Dujmovic, Guy De Tre and Suzana Dragicevic

Thursday, July 23, 14:20-16:00, Auditório 2

Visualising Rough Time Intervals in a Two-Dimensional Space

Fuzzy Descriptions to Identify Temporal Substructure Changes of Cooccurrence Graphs

Managing Imperfect Temporal Metadata in the Catalog services of Spatial Data Infrastructures Compliant with INSPIRE

Fuzzy Intersection and Difference Model for Topological Relations

Comparison of Multicriteria Methods for Land-use Suitability Assessment

SS15 - Interpretability of Fuzzy systems: Theory and Applications**Chair: J. M. Alonso**

30 José M. Alonso and Luis Magdalena
412 Hisao Ishibuchi and Yusuke Nojima
75 Corrado Mencar, Ciro Castiello and Anna M. Fanelli
407 Jorge Casillas
272 María José Gacto, Rafael Alcalá and Francisco Herrera

Wednesday, July 22, 10:10-11:50, Sala 2

A Conceptual Framework for Understanding a Fuzzy System
Discussions on Interpretability of Fuzzy Systems using Simple Examples
A Logic-Based Approach for Evaluating Interpretability of Fuzzy Rule-Based Classifiers
Embedded Genetic Learning of Highly Interpretable Fuzzy Partitions
A Multiobjective Evolutionary Algorithm for Tuning Fuzzy Rule Based Systems with Measures for Preserving Interpretability

SS17 - Computing With Words, Actions and Perceptions**Chair: S. Guadarrama**

151 Claudio Moraga and Enric Trillas
68 Enric Trillas, Claudio Moraga and Alejandro Sobrino
55 Ichiro Kobayashi and Naoko Okumura
350 Sergio Guadarrama
72 Gracian Trivino and Alejandro Sobrino

Tuesday, July 21, 16:20-18:00, Sala 3

A Computing with Words Path from Fuzzy Logic to Natural Language
On 'Family Resemblances' with Fuzzy Sets
Verbalizing Time-series Data: With an Example of Stock Price Trends
Computing with Actions: the case of driving a car in a simulated car race
Human Perceptions versus Computational Perceptions in Computational Theory of Perceptions

SS18 - New trends in Fuzzy Reasoning of Robotic Systems**Chair: P. Goncalves**

467 Paulo Goncalves, João Sousa and João Caldas Pinto
145 Seiji Yasunobu and Mitsuru Kokuhuda
3 Rainer Palm, Bourhane Kadmiry, Boyko Iliev and Dimiter Driankov
368 Áron Ballagi, Laszlo T. Koczy and Tom Gedeon

Friday, July 24, 10:10-11:50, Auditório 3

Evolving Inverse Fuzzy Models for Uncalibrated Visual Servoing in 3D Workspace
Intelligent Operation Support Method based on Time Change Fuzzy Sets
Recognition and Teaching of Robot Skills by Fuzzy Time-Modeling
Robot Cooperation without Explicit Communication by Fuzzy Signatures and Decision Trees

SS19 - Fuzzy Numbers and Fuzzy Arithmetic - Part 1**Chair: P. Grzegorzewski**

35 Chi-Tsuen Yeh
382 Przemyslaw Grzegorzewski and Karolina Pasternak-Winiarska
383 Przemyslaw Grzegorzewski and Luciano Stefanini
181 Adrian Ban and Lucian Coroianu
464 Sylvie Galichet and Reda Boukezzoula

Thursday, July 23, 14:20-16:00, Auditório 3

Approximations by Interval, Triangular and Trapezoidal Fuzzy Numbers
Weighted Trapezoidal Approximations of Fuzzy Numbers
Nonlinear-shaped Approximation of Fuzzy Numbers
Continuity and Additivity of the Trapezoidal Approximation Preserving the Expected Interval Operator
Optimistic Fuzzy Weighted Average

SS19 - Fuzzy Numbers and Fuzzy Arithmetic - Part 2**Chair: L. Stefanini**

132 Luciano Stefanini and Laerte Sorini
409 Laerte Sorini
157 Zainab Assaghir, Philippe Girardin and Amedeo Napoli
141 Jaume Casasnovas and J. Vicente Riera
140 Saeid Abbasbandy

Thursday, July 23, 16:20-18:00, Auditório 3

Fuzzy Arithmetic with Parametric LR Fuzzy Numbers
A Desktop Calculator for Parametric Fuzzy Arithmetic
Fuzzy Logic Approach to Represent and Propagate Imprecision in Agri-Environmental Indicator Assessment
Lattice Properties of Discrete Fuzzy Numbers under Extended Min and Max
Ranking of Fuzzy Numbers, Some Recent and New Formulas

SS20 - Intuitionistic Fuzzy Sets I (Interval Valued Sets)

Chair: E. Szmids

288 Barbara Pełkala

119 Mirko Navara

2 Benjamin Bedregal, Graçaliz Dimuro and Renata Reiser

Thursday, July 23, 12:00-13:00, Sala 3

Preservation of Properties of Interval-Valued Fuzzy Relations

Valuations on the Algebra of Intervals

An Approach to Interval-Valued R-Implications and Automorphisms

SS20 - Intuitionistic Fuzzy Sets II

Chair: E. Szmids

104 Edurne Barrenechea, Humberto Bustince, Miguel Pagola, Javier Fernandez and Josean Sanz

351 Eulalia Szmids and Janusz Kacprzyk

43 Glad Deschrijver

451 Panagiotis Chountas, Ermir Rogova and Krassimir T. Atanassov

152 Magdaléna Renčová

Friday, July 24, 10:10-11:50, Sala 3

Generalized Atanassov's Intuitionistic Fuzzy Index. Construction Method

Analysis of Similarity Measures for Atanassov's Intuitionistic Fuzzy Sets

Non-Conjunctive and Non-Disjunctive Uninorms in Atanassov's Intuitionistic Fuzzy Set Theory

Enhancing OLAP Querying with the aid of H-IFS

Notes on Q-Probabilities on Intuitionistic Fuzzy Events

SS21 - New Advances on Genetic Fuzzy Systems - Part 1

Chair: Y. Nojima

11 Alberto Fernández, Francisco José Berlanga, Maria Jose Del Jesus and Francisco Herrera

438 Ignacio Robles, Rafael Alcalá, José Manuel Benítez and Francisco Herrera

470 Akihiro Yorita and Naoyuki Kubota

379 Krzysztof Trawinski, Arnaud Quirin and Oscar Cordon

173 Vinicius da F. Vieira, Alexandre G. Evsukoff, Beatriz S. L. P. de Lima and Sylvie Galichet

Wednesday, July 22, 14:20-16:00, Sala 2

Genetic Cooperative-Competitive Fuzzy Rule Based Learning Method using Genetic Programming for Highly Imbalanced Data-Sets

Distributed Genetic Tuning of Fuzzy Rule-Based Systems

Evolutionary Robot Vision and Fuzzy Evaluation for Natural Communication of Partner Robots

Bi-criteria Genetic Selection of Bagging Fuzzy Rule-based Multiclassification Systems

Learning Fuzzy Rule Based Classifier in High Performance Computing Environment

SS21 - New Advances on Genetic Fuzzy Systems - Part 2

Chair: R. Alcalá

459 Yusuke Nojima and Hisao Ishibuchi

241 Michela Antonelli, Pietro Ducange, Beatrice Lazzarini and Francesco Marcelloni

262 Igor Walter and Fernando Gomide

418 János Botzheim, Péter Földesi and László Kóczy

Wednesday, July 22, 16:20-18:00, Sala 2

Interactive Fuzzy Modeling by Evolutionary Multiobjective Optimization with User Preference

Learning Concurrently Granularity, Membership Function Parameters and Rules of Mamdani Fuzzy Rule-based Systems

Coevolutionary Genetic Fuzzy System to Assess Multiagent Bidding Strategies in Electricity Markets

Solution for Fuzzy Road Transport Traveling Salesman Problem Using Eugenic Bacterial Memetic Algorithm

184 Fevrier Valdez, Patricia Melin and Oscar Castillo

Fuzzy Logic Adaptation of a Hybrid Evolutionary Method for Pattern Recognition

SS21 - New Advances on Genetic Fuzzy Systems - Part 3**Chair: Y. Nojima**

- 182 Ana Palacios, Luciano Sanchez and Ines Couso
387 Manuel Mucientes, Ismael Rodríguez-Fdez and Alberto Bugarín
440 Alicia D. Benítez and Jorge Casillas
244 Antonio Angel Márquez, Francisco Alfredo Márquez and Antonio Peregrín
454 Guillermo Jimenez de la C., Jose A. Ruz-Hernandez, Evgen Shelomov and Ruben Salazar M.

Thursday, July 23, 10:10-11:50, Sala 2

- A Baseline Learning Genetic Fuzzy Classifier Based on Low Quality Data
Evolutionary Learning of Quantified Fuzzy Rules for Hierarchical Grouping of Laser Sensor Data in Intelligent Control
Genetic Learning of Serial Hierarchical Fuzzy Systems for Large-Scale Problems
Rule Base and Inference System Cooperative Learning of Mamdani Fuzzy Systems with Multiobjective Genetic Algorithms
Optimization of an Oil Production System using Neural Networks and Genetic Algorithms

SS22 - Fuzzy Measures and Integrals - Part 1**Chair: M. Grabisch**

- 29 Erich Peter Klement, Anna Kolesárová, Radko Mesiar and Andrea Stupňanová
18 Elias F. Combarro and Pedro Miranda
79 Antonin Dvorak and Michal Holcapek
110 Antonin Dvorak and Michal Holcapek
32 Michel Grabisch

Wednesday, July 22, 14:20-16:00, Sala 1

- Universal Integrals Based on Level Dependent Capacities
On the Structure of the k-Additive Fuzzy Measures
Fuzzy Integrals over Complete Residuated Lattices
Basic Properties of L-fuzzy Quantifiers of the Type $\langle 1 \rangle$ Determined by Fuzzy Measures
Games and Capacities on Partitions

SS22 - Fuzzy Measures and Integrals - Part 2**Chair: C. Labreuche**

- 139 Katsushige Fujimoto and Aoi Honda
38 Ulrich Faigle and Michel Grabisch
21 Pedro Miranda and Michel Grabisch
286 Silvia Angilella, Salvatore Greco and Benedetto Matarazzo
123 Christophe Labreuche

Wednesday, July 22, 16:20-18:00, Sala 1

- A Value via Posets Induced by Graph-Restricted Communication Situations
A Monge Algorithm for Computing the Choquet Integral on Set Systems
On Vertices of the k-Additive Monotone Core
Non-additive Robust Ordinal Regression with Choquet integral, Bipolar and Level Dependent Choquet integrals
On the Completion Mechanism Produced by the Choquet Integral on Some Decision Strategies

SS22 - Fuzzy Measures and Integrals - Part 3**Chair: J. Marichal**

- 80 Brice Mayag, Michel Grabisch and Christophe Labreuche
137 Yasuo Narukawa and Vicenc Torra
194 Eiichiro Takahagi
114 Miguel Couceiro and Jean-Luc Marichal
115 Miguel Couceiro and Jean-Luc Marichal

Thursday, July 23, 16:20-18:00, Sala 1

- A Link Between the 2-additive Choquet Integral and Belief Functions
Distorted Probabilities and m-Separable Fuzzy Measures
Choquet Integral Based Evaluations by Fuzzy Rules
Polynomial Functions on Bounded Chains
Quasi-Polynomial Functions on Bounded Chains

SS23 - Fuzzy Geographical Information

Chair: C. Fonte	Wednesday, July 22, 16:20-18:00, Auditório 3
198 Gloria Bordogna, Giorgio Ghisalberti, Marco Pagani and Giuseppe Psaila	Geographic Information Retrieval based on Two Orthogonal Criteria
246 Luisa M. S. Gonçalves, Cidália C. Fonte, Eduardo N. B. S. Júlio and Mario Caetano	On the Information Provided by Uncertainty Measures in the Classification of Remote Sensing Images
78 Bulent Tutmez, A. Erhan Tercan, Uzay Kaymak and Christopher D. Lloyd	Local Models for the Analysis of Spatially Varying Relationships in a Lignite Deposit
309 Jorge Santos	Terrain Morphology Classification over Fuzzy Digital Elevation Models
159 Tiago Pais and Rita Ribeiro	Contributions to Dynamic Multicriteria Decision Making Models

SS24 - Soft Computing in Image Processing and Computer Vision - Part 1

Chair: P. Sobrevilla	Wednesday, July 22, 14:20-16:00, Auditório 3
371 Tom Mélangé, Mike Nachtgeael and Etienne Kerre	A Fuzzy Filter for the Removal of Gaussian Noise in Colour Image Sequences
468 Belén Prados-Suarez, Pilar Sobrevilla, Eduard Montseny and Santiago Romani	On the Reliability of the Color Gradient Vector Argument Approach
13 Vasile Patrascu	New Fuzzy Color Clustering Algorithm Based on hsl Similarity
307 Constantin Vertan	Parallel Coordinates-based Fuzzy Color Distance and its Applications
86 Ehsan Lotfi, M. Akbarzadeh-T., Hamid Reza Pourreza, Mona Yaghoubi and F. Dehghan	A Hybrid Method for Soccer Video Events Retrieval Using Fuzzy Systems

SS24 - Soft Computing in Image Processing and Computer Vision - Part 2

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222 Pedro Couto, Pedro Melo-Pinto, Humberto Bustince, Edurne Barrenechea and Miguel Pagola	Colour Image Segmentation using A-IFSs
45 Oscar Ibáñez, Oscar Córdón, Sergio Damas, Sergio Guadarrama and José Santamaría	A New Approach to Fuzzy Location of Cephalometric Landmarks in Craniofacial Superimposition
6 Cayetano Solana-Cipres, Luis Rodriguez-Benitez, Juan Moreno-Garcia, Luis Jimenez and Gerardo Fernandez-	Real-Time Segmentation of Moving Objects in H.264 Compressed Domain with Dynamic Design of Fuzzy Sets
65 Robert Luke, Derek Anderson, James Keller and Simon Coupland	Fuzzy Logic-Based Image Processing Using Graphics Processor Units
64 Derek Anderson, Robert Luke, Erik Stone and James Keller	Fuzzy Voxel Object

SS24 -Soft Computing in Image Processing and Computer Vision - Part 3

- Chair: B. Prados-Suarez** **Friday, July 24, 14:20-16:00, Auditório 3**
- 39 Tom Mélange, Mike Nachtgeael, Etienne Kerre and Peter Sussner Decomposition of Interval-Valued Fuzzy Morphological Operations by Weak $[\alpha_1, \alpha_2]$ -cuts
- 444 Jesus Chamorro-Martinez, Pedro M. Martínez-Jimenez and Jose M. Soto-Hidalgo Defining A Fuzzy Partition for Coarseness Modelling in Texture Images
- 57 Marcos Eduardo Valle Sparsely Connected Autoassociative Fuzzy Implicative Memories for the Reconstruction of Large Gray-Scale Images
- 249 Sergio Jaime-Castillo, Juan Miguel Medina and Antonio Garrido A Method for Locating the Iliac Crests Based on the Fuzzy Hough Transform
- 282 Grzegorz Nieradka and Bohdan Butkiewicz Features Stereo Matching Based on Fuzzy Logic

SS24 - Soft Computing in Image Processing and Computer Vision - Part 4

- Chair: P. Melo Pinto** **Friday, July 24, 16:20-18:00, Auditório 3**
- 138 Manuel González Hidalgo, Arnau Mir Torres, Daniel Ruiz Aguilera and Joan Torrens-Sastre Image Analysis Applications of Morphological Operators based on Uninorms
- 168 Daniel Paternain, Humberto Bustince, Josean Sanz, Mikel Galar and Carlos Guerra Image Reduction with Interval-Valued Fuzzy Sets and OWA Operators
- 189 Aranzazu Jurio, Miguel Pagola, Daniel Paternain, Carlos Lopez-Molina and Pedro Melo-Pinto Interval-Valued Restricted Equivalence Functions Applied on Clustering Techniques
- 10 Hamid R. Tizhoosh Opposite Fuzzy Sets with Applications in Image Processing
- 174 Olivia Mendoza, Patricia Melin and Juan Ramon Castro The Use of Interval Type-2 Fuzzy Logic as a General Method for Edge Detection

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- Chair: M. L. Guerra** **Wednesday, July 22, 16:20-18:00, Auditório 2**
- 230 Elettra Agliardi, Maria Letizia Guerra and Luciano Stefanini Efficient Calculation of the Value Function in Fuzzy Real Option by Differential Evolution Algorithms
- 317 Tindara Addabbo, Gisella Facchinetti, Giovanni Mastroleo and Tiziana Lang Evaluating Firms' Gender Equity by Fuzzy Logic
- 118 David de la Fuente and María José Pardo Flow Line Systems with Possibilistic Data: a System with Waiting Time in Line Uncertain
- 248 Hans Schjær-Jacobsen On Interval and Fuzzy Calculations of Economic Uncertainty
- 340 José M. Merigó Probabilistic Decision Making with the OWA Operator and its Application in Investment Management

SS27 - Soft Computing in Finance

- Chair: R. J. Almeida** **Tuesday, July 21, 16:20-18:00, Auditório 3**
- 448 Rui Jorge Almeida, Susana Vieira, Viorel Milea, Uzay Kaymak and Joao Miguel Costa Sousa Knowledge Discovery in the Prediction of Bankruptcy
- 439 Meysam Alizadeh, Roy Rada, Akram Khaleghei Ghoshe Balagh and Mir Mehdi Seyyed Esfahani Forecasting Exchange Rates: A Neuro-Fuzzy Approach
- 453 Rui Jorge Almeida and Uzay Kaymak Tail Point Density Estimation Using Probabilistic Fuzzy Systems
- 452 Milan Lovric, Rui Jorge Almeida, Uzay Kaymak and Jaap Spronk Modeling Investor Optimism with Fuzzy Connectives
- 265 Takashi Hasuike and Hiroaki Ishii A Type-2 Fuzzy Portfolio Selection Problem Considering Possibility Measure and Crisp Possibilistic Mean Value

SS28 - Topics in Decision-Making Using Fuzzy Sets

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399 Keisuke Osone and Takehisa Onisawa

423 Marek Gagolewski and Przemysław Grzegorzewski

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Exchanging Iterated Expectations of Random Upper Semicontinuous Functions: an application to decision theory

Cooperative Partner Agent of Seven-Card-Stud Poker

Possible and Necessary h-Indices

SS29 - Decision Making in Fuzzy Environments - Part 1

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386 Piero Bonissone, José M. Cadenas, Carmen Garrido,
Ramón Andrés Díaz and Raquel Martínez

408 Marta Cardin and Silvio Giove

103 David Pelta and Ronald R. Yager

268 Müjde Erol Genevois and Tuncay Gürbüz

426 Clara M. Campos, Lourdes Canós, María J. Canós, Vicente Liern, José A. Moreno and Dolores Santos

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Weighted Decisions in a Fuzzy Random Forest

Non Additive Measures for Group Multi Attribute Decision Models

Dynamic vs. Static Decision Strategies in Adversarial Reasoning

Finding the Best Flexibility Strategies by Using an Integrated Method of FAHP and QFD

Decision Making in Competitive Location using Fuzzy Sets

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150 Jana Talasova and Pavel Holecek

148 Jose M. Cadenas, Juan V. Carrillo, M. Carmen Garrido,
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362 H. Ziya Ulukan and Yeşim Kop

275 Carlos Cruz, Ricardo C. Silva, José Luis Verdegay and
Akebo Yamakami

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Multiple-Criteria Fuzzy Evaluation: The FuzzME Software Package

A Hybrid Meta-Heuristic to Solve the Portfolio Selection Problem

A Two Step Solution Procedure to a Fuzzy Medical Waste Disposal Facility Location Problem

A Parametric Approach to Solve Quadratic Programming Problems with Fuzzy Environment in the Set of Constraints

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Enrique Herrera-Viedma

48 Nesrin Halouani, Luis Martínez, Habib Chabchoub, Jean-
Marc Martel and Jun Liu

121 Jun Ma, Guangquan Zhang, Jie Lu and Da Ruan

149 M. Socorro Garcia-Cascales and M. Teresa Lamata

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A Multi-granular Linguistic Promethee Model

Impute Missing Assessments by Opinion Clustering in Multi-Criteria Group Decision Making Problems

Information System for the valuation of Universities in Spain

Multi-Goal Aggregation of Reduced Preference Relations Based on Fuzzy Interactions between Decision Goals

SS30 - Soft Computing in Medical Imaging

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Galar, Pedro Couto, Farhang Sahba and Hamid Tizhoosh
357 Robert Koprowski and Zygmunt Wrobel Hierarchic Approach in the Analysis of Tomographic Eye Image

SS31 - Medical Concepts in Soft Computing

Chair: R. Seising **Friday, July 24, 12:00-13:00, Auditório 3**
428 Mila Kwiatkowska, Krzysztof Kielan and Krzysztof Michalik A Fuzzy-Semiotic Framework for Modeling Imprecision in the Assessment of Depression
394 Tatiana Kiseliowa Towards an Interpretation of the Connectivity Analysis in the Frame of Fuzzy Equivalence Relations for Medical Diagnoses
421 Petri Heinonen, Marjo Mannelin, Hannu Iskala, Aki Sorsa Development of a Fuzzy Expert System for a Nutritional Guidance Application
and Esko Juuso
51 Elisabeth Rakus-Andersson Approximate Reasoning in Surgical Decisions

SS32 - Philosophical, Sociological and Economical Thinking - Part 1

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330 Rudolf Seising 60 years "A Mathematical Theory of Communication" — Towards a "Fuzzy Information Theory"
377 Veronica Sanz Soft Computing Confronting Philosophical and Sociological Critiques to Classical AI
122 Vesa Niskanen Application of Zadeh's Impossibility Principle to Approximate Explanation
96 Olga Kosheleva Early Start Can Inhibit Learning: Towards A New Explanation
227 Alejandro Sobrino and Martín Pereira Around Fuzziness. Some Philosophical Thoughts

SS32 - Philosophical, Sociological and Economical Thinking - Part 2

Chair: R. Seising **Tuesday, July 21, 12:00-13:00, Sala 3**
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201 Enric Trillas, Claudio Moraga and Eloy Renedo On Aristotle's NC and EM Principles in Three-valued Logics
331 Rudolf Seising On Classical, Fuzzy Classical, Quantum and Fuzzy Quantum Systems

Linguistic Fuzzy Systems

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28 Rosa M. Rodriguez, Luis Martinez and Macarena Espinilla A Comparative Analysis of Symbolic Linguistic Computational Models
31 José M. Alonso and Luis Magdalena An Experimental Study on the Interpretability of Fuzzy Systems

Fuzzy Algebra

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Andreja Tepavčević

342 Bayram Ali Ersoy and Dan Ralescu

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Fuzzy Subgroups and the Teichmüller Space

Characterization of L-Fuzzy Semi-Filters and Semi-Ideals

L-Prime Spectrum of Modules

Non-classical Algebras and Bags

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Attribute Domain Granulation

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165 Marcos Cintra, Heloisa Camargo and Trevor Martin

93 Yassine Djouadi, Basma Alouane and Henri Prade

449 Vasile Georgescu

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Optimising the Fuzzy Granulation of Attribute Domains

Fuzzy Clustering for Finding Fuzzy Partitions of Many-Valued Attribute Domains in a Concept Analysis
Perspective

Generalizations of Fuzzy C-Means Algorithm to Granular Feature Spaces, based on Underlying Metrics:
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220 Edwin Lughofer and Stefan Kindermann

167 Nick Pizzi and Witold Pedrycz

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Feature Selection Using Fuzzy Objective Functions

Rule Weight Optimization and Feature Selection in Fuzzy Systems with Sparsity Constraints

Discriminatory Components for Pattern Classification

Classification

Chair: L. Koczy

196 Hoel Le Capitaine and Carl Frélicot

460 Moamar Sayed Mouchaweh and Bernard Riera

306 Salem Benferhat and Karim Tabia

66 Tuan-Fang Fan, Churn-Jung Liau and Duen-Ren Liu

450 Carlos Campos Bracho

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Classification with Reject Options in a Logical Framework: a fuzzy residual implication approach

Incremental Possibilistic Approach for Online Clustering and Classification

On the Use of Min-Based Revision Under Uncertain Evidence for Possibilistic Classifiers

Dominance-based Rough Set Analysis for Uncertain Data Tables

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Hybrid Systems

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- 378 Rita Lovassy, Laszlo T. Koczy and Laszlo Gal Optimizing Fuzzy Flip-Flop Based Neural Networks by Bacterial Memetic Algorithm
- 183 Miguel Lopez, Patricia Melin and Oscar Castillo Pattern Recognition in Blur Motion Noisy Images using Fuzzy Methods for Response Integration in Ensemble Neural Networks
- 458 László Gál, János Botzheim, Laszlo T. Koczy and Antonio Ruano Applying Bacterial Memetic Algorithm for Training Feedforward and Fuzzy Flip-Flop based Neural Networks
- 304 Javad Jassbi and Sohrab Khanmohammadi Organizational Risk Assessment using Adaptive Neuro-Fuzzy Inference System

Approximate Reasoning

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- 188 Emad Saad, Shamiaa Elmorsy, Mahmoud Gabr and Yasser Hassan Reasoning about Actions in Fuzzy Environment
- 207 Itziar García-Honrado, Enric Trillas, Sergio Guadarrama and Eloy Renedo Evaluating Premises, Partial Consequences and Partial Hypotheses
- 16 Cristina Alcalde, Ana Burusco and Ramon Fuentes-González Interval-Valued Fuzzy Propositions. An Application to the L-Fuzzy Contexts with Absent Values
- 270 Liliana D'Errico and Michele Loreti A process Algebra Approach to Fuzzy Reasoning

Applications of Fuzzy Systems

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- 162 Arkadiusz Salski A Fuzzy Set Approach to Ecological Knowledge Discovery
- 316 Sohrab Khanmohammadi, Mohammad Ali Tinati, Sehraneh Ghaemi and Mohammad Ali Badamchizadeh Fuzzy and PSO Based Algorithm for Driver's Behavior Modeling
- 41 Joao Pedro, Joao Pires and João Paulo Carvalho Ant Colony Optimization for Distributed Routing Path Optimization in Optical Burst-Switched Networks
- 312 Shinji Fukuda A Preliminary Analysis for Improving Model Structure of Fuzzy Habitat Preference Model for Japanese Medaka (*Oryzias latipes*)

Human-centered Systems

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40 Luisa Lucila Lazzari, Patricia Inés Mouliá and Mariano Eriz

27 Ronei Moraes and Liliane Machado

257 Dilza Szwarcmán, Jesus Domech, Ricardo Tanscheit,
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An Alternative Operationalization of Fuzzy Consideration Set. Application to Tourism

Fuzzy Continuous Evaluation in Training Systems Based on Virtual Reality

A Fuzzy System for the Assessment of Human Reliability

Intensity Assessment of Pedestrian Collisions in City of Mashhad based on Fuzzy Probabilities

Combinatorial Problems

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88 Adam Kasperski and Pawel Zielinski

94 Adam Kasperski and Pawel Zielinski

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A Possibilistic Approach to Bottleneck Combinatorial Optimization Problems with Ill-Known Weights

On Possibilistic Sequencing Problems with Fuzzy Parameters

Valued Constraint Satisfaction Problems Applied to Functional Harmony

Control

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250 Jean-Yves Dieulot and Nesrine Elfelly

164 Laurent Vermeiren, Thierry M. Guerra and Hakim Lamara

413 Anis Sakly, Basma Zahra and Mohamed Benrejeb

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Stability Analysis of Continuous PI-like Fuzzy Control Systems based on Vector Norms Approach

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404 Shin-ichi Ohnishi, Takahiro Yamanoi and Hideyuki Imai

37 Tomoe Entani

427 Salem Benferhat, Faiza Haned, Aïcha Mokhtari and
Ismahane Zeddigha

333 Masaaki Ida

107 Ondrej Pavlacka and Jana Talasova

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A Fuzzy Weight Representation for Inner Dependence Method AHP

Interval AHP for Group of Decision Makers

Using Syntactic Possibilistic Fusion for Modeling Optimal Optimistic Qualitative Decision

Possibility and Necessity Evaluations based on Ordinal Comparability

Application of Fuzzy Vectors of Normalized Weights in Decision Making Models

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24 Koichi Yamada, Vilany Kimala and Muneyuki Unehara

398 Gilles Mauris

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A New Conditioning Rule, Its Generalization and Evidential Reasoning

Possibility Distribution: a unified representation for parameter estimation

Confidence Regions for the Mean of a Fuzzy Random Variable

A New Bridge Between Fuzzy Sets and Statistics

Cloud Based Design Optimization

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- 388 Michal Holcapek and Matej Turcan
191 Ramón González del Campo, Luis Garmendia and Jordi Recasens
429 Javier Martín and Gaspar Mayor
175 Susana Díaz, Bernard De Baets and Susana Montes
176 Susana Díaz, Susana Montes and Bernard De Baets

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- Graded Equipollence of Fuzzy Sets
Transitive Closure of Interval-valued Relations
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Comparison of Two Versions of the Ferrers Property of Fuzzy Interval Orders
Decomposition of the Transitivity for Additive Fuzzy Preference Structures

Clustering

Chair: H. Ishibuchi

- 273 Yukihiro Hamasuna, Yasunori Endo and Sadaaki Miyamoto
374 Francisco Queiroz, Antonio Braga and Witold Pedrycz
36 Thomas A. Runkler
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- On Tolerant Fuzzy c-Means Clustering with L1-Regularization
Sorted Kernel Matrices as Cluster Validity Indexes
Fuzzy c-Means Herding
A Fuzzy Variant of the Rand Index for Comparing Clustering Structures
Clustering of Fuzzy Shapes by Integrating Procrustean Metrics and Full Mean Shape Estimation into K-Means Algorithm

Data Analysis

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- 325 Amory Bisselier, Reda Boukezzoula and Sylvie Galichet
353 Ana Colubi, M. Ángeles Gil, Gil González-Rodríguez and Wolfgang Trutschnig
380 Mohammad Hossein Fazel Zarandi, Milad Avazbeigi and I. Burhan Turksen
197 Yuchi Kanzawa, Yasunori Endo and Sadaaki Miyamoto
195 Krystyna Biletska, Sophie Midenet, Marie-Hélène Masson and Thierry Denoeux

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- An Interval Approach for Fuzzy Linear Regression with Imprecise Data
Discriminant Analysis for Fuzzy Random Variables Based on Nonparametric Regression
A New Fuzzy Noise-Rejection Data Partitioning Algorithm with Revised Mahalanobis Distance
Fuzzy c-Lines for Data with Tolerance
Fuzzy Modelling of Sensor Data for the Estimation of an Origin-Destination Matrix

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- 445 Esmail Mehdizadeh and Reza Tavakkoli-Moghaddam
82 Bo-Ruei Kao, K. Robert Lai and Menq-Wen Lin
375 Mahmoud El Hajj, Serge Guillaume and Agnes Begue

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- A Fuzzy Particle Swarm Optimization Algorithm for a Cell Formation Problem
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Complementary Source Information Cooperation Within a Decision System for Crop Monitoring

Process Control

Chair: A. Dourado

- 338 Lara Aires, Joao Araujo and Antonio Dourado
- 310 Maryam Nasiri and Stefan Berlik
- 279 Gyeongdong Baek, Moon-Ho Choi, Tae-Ryong Jeon, Jaewoo Cho and Sungshin Kim
- 47 Ieroham Baruch and Carlos Román Mariaca Gaspar

- 100 Ieroham Baruch and Rosalba Galvan-Guerra

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Chair: M. Ojeda-Aciego

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- 255 Jesús Medina and Manuel Ojeda-Aciego
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Chair: A. Sostak

- 433 Vechislav Ruzha and Svetlana Asmuss
- 402 Alexander Sostak
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Decision

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- 381 José Luis García-Lapresta, Bonifacio Llamazares and Teresa Peña
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- Industrial Monitoring by Evolving Fuzzy Systems
- Modeling of Polyester Dyeing Using an Evolutionary Fuzzy System
- Online Measurement of Oily-water Using Rule-based Fuzzy Concentration Map and Halogen Fluorescence

- Recurrent Neural Kalman Filter Identification and Indirect Adaptive Control of a Continuous Stirred Tank Bioprocess
- Decentralized Adaptive Fuzzy-Neural Control of an Anaerobic Digestion Bioprocess Plant

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- Fuzzy Concept Lattice is Made by Proto-Fuzzy Concepts
- On the Representation Theorem of Multi-Adjoint Concept Lattices
- Possibility Theory and Formal Concept Analysis in Information Systems

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- A construction of an L-fuzzy valued measure of L-fuzzy sets
- On M-Approximative Operators and M-Approximative Systems
- On Some Fuzzy Categories of Many-Valued Topological Spaces
- Convergence Theorems for Generalized Random Variables and Martingales

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- The fuzzy Induced Generalized OWA Operator and its Application in Business Decision Making
- Determining OWA Weights by Maximizing Consensus

- A Fuzzy Multi-Criteria Approach to WEEE Treatment Strategy Selection
- Consistency of Pair-wise Comparison Matrix with Fuzzy Elements