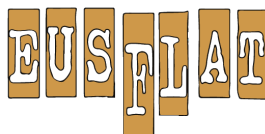


IPMU2024 Lisboa

22nd-26th July 2024, Lisbon, Portugal

20th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems



Global Schedule

Monday 22/07		Tuesday 23/7		Wednesday 24/7		Thursday 25/7		Friday 26/7	
Auditorium	room 02.1	Auditorium	room 02.1	Auditorium	room 02.1	Auditorium	room 02.1	Auditorium	room 02.1
Auditorium	room 02.2	Auditorium	room 02.2	Auditorium	room 02.2	Auditorium	room 02.2	Auditorium	room 02.2
09:00	Opening session								
09:20	Mo1A	Tu1A	Tu1B	We1A	We1B	Th1A	Th1B	Fr1A	Fr1B
09:40	Mo1B								
	Mo1C								
10:40	Coffee Break	Coffee Break		Coffee Break		Coffee Break		Coffee Break	
11:00	Keeley Crockett	Thierry Marie Guerra		Ruth Byrne		Th2A		Mário Figueiredo	
12:00	Lunch	Lunch		Lunch		Lunch		Closing session	
13:30	Mo2A	Tu2A	Tu2B	We2A	We2B	Th3A	Th3B		
	Mo2B								
	Mo2C								
15:10	Coffee Break	Coffee Break		Coffee Break		Coffee Break		Coffee Break	
15:30	Mo3A	Tu3A	Tu3B	We3A	We3B				
16:00	Mo3B								
	Mo3C								
17:00	Welcome reception	EUSFLAT Meeting				Judea Pearl Kampé de Fériet award			
				Banquet, with best paper award					

Monday 22/07

SP = Short Paper, SS = Special Session

09:00 Opening session

09:40 Parallel Sessions

Mo1A SS13: Fuzzy Modelling and Control I

Chair: Juan Manuel Escaño

- 09:40 Leandro Maciel, Rosangela Ballini and Fernando Gomide. [Adaptive Fuzzy Level Set Streamflow Modeling and Forecasting](#)
- 10:00 William D. Chicaiza, Yeyson A. Becerra-Mora, Juan Manuel Escaño, Adolfo J. Sánchez and José Ángel Acosta. [Development of Neurofuzzy and Gaussian Regression Models for a Solar Photovoltaic System](#)
- 10:20 (SP) Thi Minh Tam Pham and Irina Perfilieva. [F-transform Utility in the Operational-Matrix Approach to the Nonlinear Volterra Integral Equation](#)

Mo1B SS2: Theoretical and Applied Aspects of Imprecise Probabilities

Chair: Enrique Miranda

- 09:40 Renato Pelessoni and Paolo Vicig. [Probability Inequalities with Imprecise Previsions](#)
- 10:00 David Nieto-Barba, Ignacio Montes and Enrique Miranda. [Distortions of imprecise probabilities](#)
- 10:20 Daira Pinto Prieto, Ronald de Haan and Sebastien Destercke. [How to efficiently decompose belief functions?](#)

Mo1C SS12: Soft Computing, Uncertainty, Imprecision and Image Processing I

Chair: Olivier Strauss

- 09:40 Olivier Strauss, Frederic Comby and Sébastien Destercke. [Suppressing impulse noise via cloud filtering](#)
- 10:00 (SP) Antonio Fernández-Rodríguez, Jose David Fernandez-Rodriguez, Ezequiel López-Rubio and Miguel A. Molina-Cabello. [Mitigating motion blur in images using Encoding Generative Adversarial Network](#)
- 10:20 (SP) Hana Zámečnicková and Irina Perfilieva. [F-transform on triangulated domain](#)

10:40 Coffee Break

11:00 Keeley Crockett
[People Powered AI – Challenges and opportunities in Responsible and Trustworthy AI Development](#)

12:00 Lunch

13:30 Parallel Sessions

Mo2A Advances in Fuzzy Systems

Chair: Davide Petturiti

- 13:30 (SP) Jiri Kupka. [Interactive computing](#)
- 13:50 Nicolas Madrid and Eloisa Ramírez Poussa. [Analysis of the f-index of inclusion restricted to a set of indexes](#)
- 14:10 Jiří Močkoř. [Groupoids in categories of fuzzy topological spaces with continuous fuzzy relations](#)
- 14:30 (SP) Carmen Torres-Blanc, Luis Magdalena, Susana Cubillo and Jesus Martinez-Mateo. [Subsethood in type-2 fuzzy sets](#)
- 14:50 (SP) Juliano Buss, Bruna Novack, Cecilia Botelho, Helida Santos, Giancarlo Lucca, Lizandro Oliveira, Anderson Cruz, Adenauer Yamin and Renata Reiser. [From Quantum Fuzzy Modality Interpretations to Qiskit Platform Simulations](#)

Mo2B Advanced Data Analysis I

Chair: Jean-Philippe Poli

- 13:30 Abdelhak Imoussaten, Jacky Montmain and Gérard Dray. [Possibilistic Approach for Meta-analysis](#)
- 13:50 (SP) Marcell T. Kurbucz and Antal Jakovác. [New Applications of Spectral Decomposition in Forecasting and Hypothesis Testing](#)
- 14:10 (SP) Qusai Khaled, Uzay Kaymak and Laura Genga. [An End-to-End Framework for AI Integration in Desalination Systems](#)
- 14:30 Grégory Smits and Marie-Jeanne Lesot. [COPILS: COMParlson of Linguistic Summaries](#)
- 14:50 Marcelo Loor, Ana Tapia-Rosero and Guy De Tré. [Handling Veracity of SVM Predictions](#)

Mo2C Optimization and Scheduling

Chair: João Sousa

- 13:30 Ricardo Magalhães, Filipe Santos, Susana Vieira and João Sousa. [Dual Resource Flexible Job Shop Scheduling Problems: the xBTF Algorithm](#)
- 13:50 Miguel Martins, Susana Vieira and João Sousa. [Forced periodic optimal scheduling policy for graph reinforcement learning](#)
- 14:10 Romain Guillaume, Adam Kasperski and Pawel Zielinski. [Lot Sizing Problem Under Lead-time Uncertainty](#)
- 14:30 (SP) Svetlana Asmuss and Natalja Budkina. [Optimal trajectory planning under vague constraints](#)
- 14:50 Mārtiņš Zemlītis and Olga Grigorenko. [Similarity Relations Based Numerical Algorithm for Solving Maximin Problems](#)

15:10 Coffee Break

15:40 Parallel Sessions

Mo3A SS13: Fuzzy Modelling and Control II

Chair: William Chicaiza

- 15:40 Pablo G. Camacho, William D. Chicaiza, Juliana Sobral, Juan M. Escaño, Bismark C. Torrico and Fabrício G. Nogueira. [Fuzzy C-Means Clustering Identification of Desalination Plant Model](#)
- 16:00 Rodrigo Ventura, Filipe Santos, Susana Vieira and João Sousa. [Fuzzy Rule Based Ensemble for Classification of Gait Patterns in Cerebral Palsy Patients](#)
- 16:20 (SP) Martina Dankova. [Do Implicational Weighted Fuzzy Rules Serve Well Only for Functional Dependency?](#)

Mo3B Advances in Uncertainty Modeling I

Chair: Susana Montes

- 15:40 Priscillia Labourg, Sébastien Destercke, Romain Guillaume, Jeremy Rohmer, Benjamin Quost and Stéphane Belbèze. [Geospatial uncertainties: a focus on intervals and spatial models based on inverse distance weighting](#)
- 16:00 (SP) Sara S. Fernandez, Agustina Bouchet, Irene Diaz, Susana Diaz-Vazquez and Susana Montes. [Measures of embedding for closed intervals in the real line](#)
- 16:20 (SP) Mohammad Ojaghi, Sara S. Fernández, Agustina Bouchet, Irene Mariñas-Collado and Susana Montes. [Degree of ordering for intervals](#)

Mo3C SS12: Soft Computing, Uncertainty, Imprecision and Image Processing II

Chair: Irina Perfilieva

- 15:40 Abdulsahab Fatimah, Belal Al-Khateeb Belal, László T. Kóczy and Nagy Szilvia. [A Proposed Liver Cancer Classification](#)
- 16:00 Leandro Nascimento, Quentin François, Bertrand Duplat, Sinan Haliyo and Isabelle Bloch. [Estimating the registration error of brain MRI data based on regression U-Net](#)
- 16:20 Olivier Strauss and Tristan Cossin. [Robot visual servoing via Guess Filter](#)

17:00 Welcome reception

Tuesday 23/7

SP = Short Paper, SS = Special Session

09:00 Parallel Sessions

Tu1A SS09: Dynamic Decision Models under Uncertainty and Imprecision

Chair: Barbara Vantaggi

- 09:00 Marco Baiocchi, Andrea Capotorti and Alessio Troiani. [A Fuzzy Ensemble of Features Selectors through SMART-or Aggregation and Yager fuzzy Ordering](#)
- 09:20 Didier Dubois, Romain Guillaume, Christophe Marsala and Agnès Rico. [Interpreting Fuzzy Decision Trees with Probability-Possibility Mixtures](#)
- 09:40 Andrea Cinfrignini, Davide Petturiti and Barbara Vantaggi. [Behavioral Dynamic Portfolio Selection via Epsilon-Contaminations](#)
- 10:00 Inese Bula. [Existence of Quasi-Nash Equilibrium in Game with Discontinuous Payoff Functions](#)
- 10:20 Silvia Lorenzini, Davide Petturiti and Barbara Vantaggi. [Optimal Transport in Dempster-Shafer Theory and Choquet-Wasserstein Pseudo-Distances](#)

Tu1B Advanced Data Representation and Modeling Techniques in Knowledge Systems

Chair: Rui Jorge Almeida

- 09:00 Claudio Proietti Mercuri, Jonas Benjamin Krieger and Rui Jorge Almeida. [Exploring Word Embedding in Modeling Risk Perception](#)
- 09:20 Yongfan Wang, Ronald Yager and Marek Reformat. [Similarity of Concepts in Weighted Knowledge Graphs](#)
- 09:40 (SP) Christian Fermüller. [Judgment Aggregation with Fuzzy Deontic Logics](#)
- 10:00 (SP) João Santos, Rui Pinto, Joao Sousa and Susana Vieira. [Ontology-based Knowledge Graph for Supply Chain and Operations Mapping](#)

Tu1C SS3: Data Aggregation

Chair: Bernard De Baets

- 09:00 Raúl Pérez-Fernández and Bernard De Baets. [Two prominent examples of penalty-based aggregation of circular data](#)
- 09:20 Juan Baz, Gleb Beliakov, Irene Diaz and Susana Montes. [Taxonomy of aggregations of random variables](#)
- 09:40 Daniel Buffum, Stephen Broomell, Christian Wagner and Derek Anderson. [The Compositional Nature of Weights](#)
- 10:00 (SP) Marina Iturrate-Bobes and Raúl Pérez-Fernández. [On the use of aggregation functions within tests of symmetry](#)

10:40 Coffee Break

11:00 Thierry Marie Guerra
[A brief history of Fuzzy Control, few examples and a tribute to Michio Sugeno](#)

12:00 Lunch

13:30 Parallel Sessions

Tu2A XAI and causality

Chair: Sébastien Destercke

- 13:30 Louenas Bounia. [Enhancing the Intelligibility of Decision Trees with Concise and Reliable Probabilistic Explanations](#)
- 13:50 Olivier Rousselle, Jean-Philippe Poli and Nadia Ben Abdallah. [Towards an interpretable fuzzy approach to experimental design](#)
- 14:10 Nalan Basturk, Chumasha Rajapaksa and Rui Jorge Almeida. [Graphical Causal Models with Discretized Data and Background Information](#)
- 14:30 Maarten C. Vonk, Diederick Vermetten, Jacob de Nobel, Sebastiaan Brand, Ninoslav Malekovic, Thomas Bäck, Alfons Laarman and Anna V. Kononova. [Optimizing Causal Interventions in Hybrid Bayesian Networks](#)
- 14:50 Lucie Kunitomo-Jacquín, Aurore Lomet and Geoffrey Daniel. [Assessing Causal Graph Uncertainty and Optimized Multivariate Discretization Strategy](#)

Tu2B SS7: Soft Methods in Statistical Inference and Data Analysis I

Chair: Przemyslaw Grzegorzewski

- 13:30 Aleksandra Skarżyńska and Maciej Romaniuk. [On Improvement of the DE-MC_Z Algorithm with Modes Identification](#)
- 13:50 Jarosław Szkoła, Barbara Pękala and Krzysztof Dyczkowski. [Refining Uncertainty Management in Machine Learning: An Interval-Valued Fuzzy Set Approach to Logistic Regression](#)
- 14:10 Julien Rosset and Laurent Donzé. [Fuzzy Confidence Intervals by Bootstrapped Fuzzy Distributions](#)
- 14:30 Nhung Cao and Martin Stepnicka. [The Suitability of Upper Boundary Algebra for Solving Partial Fuzzy Relational Equations](#)

Tu2C SS14: EUSFLAT Working Group on Aggregation Operator I

Chair: Michal Baczynski

- 13:30 Gül Deniz Çaylı. [Generating uninorms on a bounded lattice L based on uninorms on a sublattice of L](#)
- 13:50 (SP) Andrea Stupnanova. [Discrete associative extended aggregation functions based on extreme values](#)
- 14:10 (SP) Juraj Kalafut. [A note on pseudo-n-uninorms](#)
- 14:30 (SP) Marc Munar, Arnau Mir, Sebastia Massanet and Daniel Ruiz-Aguilera. [On the asymptotic density of the enumeration of some classes of operators defined on finite chains](#)
- 14:50 (SP) Martin Kalina. [Ordinal sum of semigroups yielding a uninorm](#)

15:10 Coffee Break

15:40 Parallel Sessions

Tu3A Decision Making and Ranking Methodologies I

Chair: Martin Stepnicka

- 15:40 Thomas A. Runkler. [Visualization of Preference Matrices for Labeled Objects](#)
- 16:00 Amélie Leroy, Meltem Öztürk, Gabriella Pigozzi and Karima Sedki. [Ranking of Arguments using Social Ranking Choice](#)
- 16:20 Jelizaveta Jelinska and Olga Grigorenko. [Metric-Based Fuzzy Equivalence and Inequality Relations](#)
- 16:40 Ryszard Janicki and Ni Yang. [On Efficacy of Approximating Arbitrary Relations by Partial Orders](#)

**Tu3B SS7: Soft Methods in Statistical Inference and Data Analysis II
SS18: EUSFLAT Working Group on Learning and Data Mining**

Chair: Katarzyna Kaczmarek-Majer

- 15:40 Katarzyna Kaczmarek-Majer, Michał Baczyński, Olgierd Hryniewicz, Katarzyna Miś and Filip Wichrowski. [Fuzzy Linguistic Summaries for Hidden Markov Models](#)
- 16:00 (SP) Przemyslaw Grzegorzewski, Anna Król, Piotr Grochowalski and Wojciech Rzasa. [Fuzzy Equivalences in Time Series Classification](#)
- 16:20 Van Tri Do, Violaine Antoine and Jonas Koko. [WECM: an evidential subspace clustering algorithm](#)
- 16:40 (SP) Irina Perfilieva. [Can Machine Learning Help in Approximating Continuous Functions Satisfactorily?](#)

Tu3C SS14: EUSFLAT Working Group on Aggregation Operator II

Chair: Michal Holcapek

- 15:40 Katsushige Fujimoto and Aoi Honda. [A new duality concept for AC and interaction operators through the IE-integral](#)
- 16:00 Stanislav Basarik and Lenka Halčinová. [Extended permutations dependent Choquet-like operator and application](#)
- 16:20 (SP) Adam Šeliga, Susanne Saminger-Platz, Anna Kolesárová, Radko Mesiar and Erich Peter Klement. [Pi-ordinal sums of transformations of copulas](#)
- 16:40 (SP) Matúš Ďubek. [General framework for intuitionistic values](#)

17:00 EUSFLAT Meeting

Wednesday 24/7

09:00 Parallel Sessions

We1A SS10: Flexible Advanced Mining Methods for Data, Text and Social Networks

Chair: Carlos Fernandez-Basso

- 09:00 Salvador López Joya, José Ángel Díaz García, María Dolores Ruiz Jiménez and María José Martín Bautista. [Why a bot is undetectable? An explainability-based study of misclassified automated accounts in social networks](#)
- 09:20 J. Angel Diaz-Garcia, M. Dolores Ruiz and Maria J. Martin-Bautista. [Liars know how to argue: An approach to disinformation analysis based on argument mining](#)
- 09:40 Catarina Pontes, António Fonseca, Sérgio Moro, Fernando Batista, Ricardo Ribeiro, Catarina Marques, Paula Carvalho, Cláudia Silva and Rita Guerra. [Unveiling Patterns of Hate Speech in the Portuguese Sphere: A Social Network Analysis Approach](#)
- 10:00 Andrea Morales-Garzón, Roberto Morcillo-Jiménez, Karel Gutiérrez-Batista and Maria J. Martin-Bautista. [User-friendly health-conscious recipe adaptation system using fuzzy linguistic variables](#)

We1B SS5: Representing and Managing Uncertainty I

Chair: Jesús Medina

- 09:00 M. Eugenia Cornejo, Elena Jaramillo-Rosado and David Lobo. [Bipolar inequations on complete distributive symmetric residuated lattices](#)
- 09:20 Petra Stevuliakova and Zahra Alijani. [Division of Interactive Fuzzy Numbers Using Joint Possibility Distributions](#)
- 09:40 (SP) Tommaso Flaminio, Francesco Manfucci and Sara Ugolini. [Conditionals as quotients: an algebraic approach](#)
- 10:00 (SP) Manuel Ojeda-Hernandez, Inma P. Cabrera, Pablo Cordero and Emilio Muñoz-Velasco. [Fuzzy pseudointents](#)
- 10:20 (SP) Libor Behounek. [Precompact fuzzy indistinguishability relations: a model of bounded discernment in similarity-based reasoning](#)

We1C Decision Making and Ranking Methodologies II

Chair: Vladik Kreinovich

- 09:00 Ignacio Montes, Pérez-Fernández Raúl and De Baets Bernard. [A correspondence between methods for ranking elements of a poset and stochastic orderings](#)
- 09:20 (SP) Michal Holcapek, Nhung Cao, Radek Valasek, Nicolas Madrid, Tomas Tichy and David Nedela. [An Exploration of The Weighted Quantile Approach in Probabilistic Fuzzy Inference](#)
- 09:40 Pavel Novoa-Hernández, David Pelta and José Luis Verdegay. [On the impact of weighting schemes on alternative evaluation](#)
- 10:00 (SP) Zhen Zhang. [Consensus Reaching Model for Two-Rank Group Decision Making with Personalized Individual Semantics](#)

10:40 Coffee Break

11:00 Ruth Byrne: [How people understand counterfactual explanations for decisions by AI systems](#)

12:00 Lunch

13:30 Parallel Sessions

We2A SS4: Information fusion techniques based on aggregation functions, preaggregation functions and their generalizations and SS15: EUSFLAT Working Group on Fuzzy Logic-Based Decision Modeling in Economics and Social Sciences

Chair: Javier Fernandez

- 13:30 Filipe Santos, João M. C. Sousa and Susana M. Vieira. [Topic Modeling for enhancing Transformers Hate Speech Detection](#)
- 13:50 Mónica Martins, Filipe Santos, Alexandre Almeida, Susana M. Vieira and João M. C. Sousa. [Using Information Fusion to Predict Customer Sentiment](#)
- 14:10 (SP) Diego García-Zamora, Bapi Dutta, José Rui Figueira and Luis Martínez. [Deck-of-Card-based Membership functions: A Socio-Technical Approach](#)
- 14:30 (SP) Pelayo S. Dosantos, Irene Mariñas-Collado, Agustina Bouchet and Susana Montes. [Averaging functions and admissible orders applied to the Interval Shortest Path Problem](#)
- 14:50 Brice Mayag. [A robust interpretation of criteria interactions: Explaining the Human Development Index ranking by a 2-additive Choquet Integral model](#)

We2B SS5: Representing and Managing Uncertainty II*Chair: David Lobo*

- 13:30 Stefanie Penzel, Mathias Rudolph, Helko Borsdorf and Olfa Kanoun. [Managing Uncertainty in Spectra for Fuzzy Classification](#)
- 13:50 Maria Eugenia Cornejo Piñero, Jesús Medina and Francisco José Ocaña Alcázar. [Characterizing fully true attribute implications](#)
- 14:10 Fernando Chacón, Maria Eugenia Cornejo Piñero and Jesús Medina. [Efficiency of fuzzy decision algorithms based on the certainty of decision rules](#)
- 14:30 (SP) Henri Bollaert, Marko Palangetić, Chris Cornelis, Salvatore Greco and Roman Slowinski. [Fuzzy rough rule induction with granular approximations](#)
- 14:50 Henri Prade and Gilles Richard. [From default to analogical and paralogical reasoning. Logics of pairs and their multiple-valued extensions](#)

We2C Innovative Approaches in Neural Network Applications*Chair: Christophe Marsala*

- 13:30 Alberto Ortiz, Óscar Valero and Juan José Miñana. [On the Use of Modular Indistinguishability Operators in RBFNN-like Models](#)
- 13:50 (SP) Iliaria Lucrezia Amerise, Valeria Fionda and Giuseppe Pirrò. [Time-Series Cross-Sectional Missing Data Imputation via Bipartite Graphs](#)
- 14:10 Joanna C. Manjarres, Douglas O. Cardoso, Aldebaro Klautau and José Ferreira de Rezende. [A WiSARD Network Approach for 5G MIMO Beam Selection](#)
- 14:30 (SP) Malgorzata Schwab. [Invertible Neural Networks for Synthetic Data Generation Satisfying Privacy Preservation Principles](#)

15:10 Coffee Break

15:40 Parallel Sessions

We3A SS4: Information Fusion Techniques based on Aggregation Functions, Preaggregation Functions and their Generalizations II*Chair: Graçaliz Dimuro*

- 15:40 (SP) Tiago da Cruz Asmus, Humberto Bustince, Giancarlo Lucca, Cedric Marco-Detchart, Heloisa Camargo, Joelson Sartori and Graçaliz Dimuro. [On generalized n-dimensional grouping indices](#)
- 16:00 (SP) Mikel Ferrero-Jaurrieta, Rui Paiva, Anderson Cruz, Asier Urrio, Radko Mesiar, Zdenko Takác and Humberto Bustince. [Pseudo-additive generators for pseudo-overlap and pseudo-grouping functions](#)
- 16:20 Lidiane C. Silva, Lizandro S. Oliveira, Helida Santos, Giancarlo Lucca, Adenauer Yamin, Benjamin Bedregal and Renata Reiser. [Intf-HybridMem: \$\omega\$ A-IvE Entropy Analysis via Median and Arithmetic Mean Fuzzy Aggregations](#)
- 16:40 (SP) Nicolás Zumelzu, Johanna Marambio, Rui Paiva, Andres Mansilla, Edmundo Mansilla, Nicolas Jacobino-Martins and Benjamín Bedregal. [The ordered weighted geometric averaging \(OWGA\) operators on fuzzy numbers based in admissible orders](#)

We3B SS5: Representing and Managing Uncertainty III*Chair: Fernando Chacón-Gómez*

- 15:40 (SP) Manuel Ojeda-Hernandez, Domingo López-Rodríguez, Francisco Pérez-Gámez and Carlos Bejines López. [Quasi and pseudo-closed elements in partial formal concept analysis](#)
- 16:00 (SP) Pedro Huidobro, Noelia Rico, Sara S. Fernández and Agustina Bouchet. [Strong Robust Similarities: A new family of similarity measures](#)
- 16:20 (SP) Tommaso Flaminio, Lluís Godó and Giuliano Rosella. [Possibility of Conditionals and Conditional Possibilities: From the Triviality Result to Possibilistic Imaging](#)
- 16:40 (SP) Mario Villar, Noelia Rico and Irene Diaz. [Scoring Uncertainty in Synthetic Voting Procedures](#)

We3C SS8: Linguistic Expressions and Generalized Quantifiers and SS21: EUSFLAT Working Group on Soft Computing in Database Management and Information Retrieval*Chair: Katarzyna Kaczmarek-Majer*

- 15:40 (SP) Ares Fabregat-Hernández, Javier Palanca and Vicent Botti. [Unpacking Language Categories: Uncertainty and Similarity](#)
- 16:00 (SP) Petra Murinová and Vilém Novák. [Application of intermediate quantifiers suggest way to solution of problems of non-monotonic logic](#)
- 16:20 (SP) Aleksandra Rutkowska. [Measure inflation expectations by incorporating linguistic term evolving perception within a fuzzy environment](#)
- 16:40 (SP) Janusz Kacprzyk and Sławomir Zadrozny. [A new approach to query suggestion for bipolar queries via linguistic data summaries](#)

Thursday 25/7

SP = Short Paper, SS = Special Session

09:20 Parallel Sessions

Th1A SS10: Flexible Advanced Mining Methods for Data, Text and Social Networks II

Chair: Jose A. Diaz-Garcia

- 09:20 (SP) Roberto Morcillo-Jimenez, Andrea Morales-Garzón, Karel Gutiérrez-Batista, Maria J. Martin-Bautista and Ignacio Chiroso-Ríos. [Advances in AI for Isometric Training: Towards Explainable Models and Injury Prevention in Sports Science using Fuzzy Logic](#)
- 09:40 Pedro Fialho, Ricardo Ribeiro, Fernando Batista, Gil Ramos, António Fonseca, Sérgio Moro, Rita Guerra, Paula Carvalho, Catarina Marques and Cláudia Silva. [Counter hate speech detection in Youtube conversations](#)
- 10:00 Karel Gutiérrez-Batista, Diego Rincon-Yanez and Sabrina Senatore. [Human-oriented fuzzy-based assessments of knowledge graph embeddings for fake news detection](#)
- 10:20 Luigi Lomasto, Yuri Brandi, Raffaele Aurucci, Lukasz Gajewski, Rocco Zaccagnino, Delfina Malandrino and Nicola Lettieri. [Sentiment Impact on Fake News Detection: A Preliminary Study](#)

Th1B SS20: EUSFLAT Working Group on Philosophical Foundations

Chair: Marco Elio Tabacchi

- 09:20 Giuseppe Filippone, Gianmarco La Rosa and Marco Elio Tabacchi. [Max Black and a Logic of Vagueness](#)
- 09:40 Giuseppe Filippone, Gianmarco La Rosa, Manuel Mancini and Marco Elio Tabacchi. [Fuzziness and Lie Algebras](#)
- 10:00 Emīls Kalugins and Alexander Šostak. [Functors in Fuzzy Category Theory](#)
- 10:20 Viviana Beltran, Hajer Rabii and Irina Safiulina. [Human-Centered Ontological Work Environment Framework: a Focus on Motivational Factors](#)

Th1C SS6: Fuzzy Implication Functions I

Chair: Pawel Drygas

- 09:20 Kavita Nanavati and Balasubramaniam Jayaram. [On Pseudo-Homogeneity of Fuzzy Implications](#)
- 09:40 (SP) Raquel Fernandez-Peralta and Sebastia Massanet. [Polynomial operators within the most well-known families of fuzzy implication functions](#)
- 10:00 (SP) Michal Baczynski and Hongjun Zhou. [On the Migrativity of Fuzzy Implication Functions](#)
- 10:20 (SP) Kavita Nanavati Akhilesh, Nageswara Rao Vemuri and Balasubramaniam Jayaram. [Algebras on Continuous Archimedean T-norms](#)

10:40 Coffee Break

11:00 Parallel Sessions

Th2A SS11: Logic-based Decision Making

Chair: Pavle Milošević

- 11:00 Aleksa Radosavcevic, Ana Poledica and Ilija Antovic. [Discovery of key factors in hedge funds investment strategies using optimal IBA-based logical polynomials](#)
- 11:20 (SP) Milica Zukanović and Aleksandar Rakicevic. [An LSP-based approach for investment decision making: Case of US stocks selection](#)
- 11:40 (SP) Nevena Čolić, Pavle Milošević, Ivana Dragović and Miljan Čeranić. [Hospital length of stay estimation using interpolative Boolean algebra](#)

Th2B SS4: Information fusion Techniques based on Aggregation Functions, Preaggregation Functions and their Generalizations III

Chair: Tiago Asmus

- 11:00 (SP) Pedro Huidobro, Julio Rodilla, Martin Gutiérrez and Javier Fumanal-Idocin. [Examining Ranking Methods as Aggregation Functions](#)
- 11:20 (SP) Rui Paiva, Nicolás Zumelzu, Roberto Díaz, Edmundo Mansilla, Nicolás Jacobino-Martins and Benjamín Bedregal. [m-ary Quasi-overlap functions on n-dimensional vectors](#)
- 11:40 (SP) Miqueias Amorim Santos Silva, Gracaliz P. Dimuro, Cedric Marco-Detchart, Giancarlo Lucca, Eduardo Nunes Borges and Renan Acosta. [Effects of Image Blurring on the Efficiency of Edge Detection Algorithms](#)

Th2C SS6: Fuzzy Implication Functions II*Chair: Michal Baczynski*

- 11:00 (SP) Kavit Nanavati Akhilesh, Nageswara Rao Vemuri and Balasubramaniam Jayaram. [Some solutions of the functional equation \$A\(T\(x, y\), S\(x, y\)\) = A\(x, y\)\$](#)
- 11:20 (SP) Pravallika Kolluru and Nageswara Rao Vemuri. [Sup-T composition of fuzzy implications from different families](#)
- 11:40 (SP) Paweł Drygaś, Piotr Grochowalski and Zbigniew Suraj. [Some notes on inverted fuzzy implications](#)

12:00 Lunch

13:30 Parallel Sessions

Th3A SS01: In honor of Michio Sugeno*Chair: Agnès Rico*

- 13:30 Didier Dubois, Henri Prade and Agnes Rico. [Fuzzy integrals and if then rules: the bipolar case](#)
- 13:50 Leone Bacciu, Paolo Cazzaniga, Chiara Gallese, Caro Fuchs, Uzay Kaymak, Daniele M. Papetti and Marco S. Nobile. [Our fruitful relationship with Sugeno inference, from FUMOSO to pyFUME](#)
- 14:10 Zuzana Ontkovicova and Vicenc Torra. [On measures resulting from the Choquet integration](#)
- 14:30 Henri Prade and Gilles Richard. [Multiple viewpoint analogical proportions and their weighting](#)
- 14:50 Olivier Strauss, Agnes Rico and Florentin Kucharczak. [Imprecise Sugeno integral based decision](#)
- 15:10 (SP) Michal Holcapek and Viec Bui Quoc. [On Approximation of lattice-valued functions using lattice integral transforms](#)

**Th3B SS10: Advanced Mining Methods - Data, Text, Social Networks III
SS17: EUSFLAT Working Group on Intuitionistic Fuzzy Sets: Theory, Applications and Related Topics***Chair: Karel Gutiérrez-Batista*

- 13:30 Carlos Fernandez-Basso, M. Dolores Ruiz and Maria J. Martin-Bautista. [Designing a Novel Fuzzy Association Rule Mining Algorithm for Federated Environments](#)
- 13:50 Bartolome Ortiz-Viso, Carlos Fernandez-Basso, M. Dolores Ruiz and Maria J. Martin-Bautista. [Unveiling Hidden Patterns in Clinical Databases: A Novel Approach Using Level-By-Level Association Rule Mining](#)
- 14:10 (SP) Asier Urio-Larrea, Javier Andreu-Perez, Javier Fernandez, Heloisa Camargo, Graçaliz Dimuro and Humberto Bustince. [Similarity-based Rule Selection in a Federated Rule Learning Algorithm](#)
- 14:30 Alexander Šostak and Ingrida Uļjane. [Biipolar fuzzy extension of topological structures on fuzzy powersets.](#)
- 14:50 (SP) Agustina Bouchet, Susana Diaz-Vazquez, Irene Díaz and Susana Montes. [Embedding Measures for IVFSs as an interval](#)

Th3C SS19: EUSFLAT Working Group on Mathematical Fuzzy Logic*Chair: Matteo Bianchi*

- 13:30 Stefano Aguzzoli and Matteo Mordonini. [Counting homomorphisms between finite Goedel algebras](#)
- 13:50 Francesc Esteva, Joan Gispert and Lluís Godo. [On the paraconsistent companions of involutive fuzzy logics that preserve non-falsity](#)
- 14:10 Vitor Greati, Sérgio Marcelino and Umberto Rivieccio. [Axiomatizing the Logic of Ordinary Discourse](#)
- 14:30 José Antonio Torné-Zambrano and Jesús Medina. [Revisiting immediate consequences operator on first-order logic programming](#)
- 14:50 (SP) Stefano Aguzzoli and Brunella Gerla. [A categorical duality for finite semilinear Hilbert algebras](#)
- 15:10 (SP) Valeria Giustarini and Sara Ugolini. [MTL does not have the interpolation property](#)

15:40 Coffee Break

16:00 Judea Pearl (Kampé de Fériet award)
[From the Management of Uncertainty to the Management of its Causes](#)

Friday 26/7

SP = Short Paper, SS = Special Session

09:00 Parallel Sessions

Fr1A Advances in Uncertainty Modeling II

Chair: Fernando Gomide

- 09:00 Niklas Winnewisser, Michael Beer, Vladik Kreinovich and Olga Kosheleva. [From Quantifying and Propagating Uncertainty to Quantifying and Propagating Both Uncertainty and Reliability: Practice-Motivated Approach to Measurement Planning and Data Processing](#)
- 09:20 Jorge D. Laborda, Pablo Torrijos Arenas, José M. Puerta and José A. Gámez. [Enhancing Bayesian Network Structural Learning with Monte Carlo Tree Search](#)
- 09:40 Annet Onnes, Mehdi Dastani, Roel Dobbe and Silja Renooij. [Extending Idioms for Bayesian Network Construction with Qualitative Constraints](#)
- 10:00 (SP) Gabriele Carcassi and Christine Aidala. [Non-additive measures for quantum probability?](#)

Fr1B SS7: Soft Methods in Statistical Inference and Data Analysis

Chair: Przemyslaw Grzegorzewski

- 09:00 Yelyzaveta Liubonko and Maciej Romaniuk. [Discrete and Smoothed Resampling Methods for Interval Numbers](#)
- 09:20 Barbara Pekala and Dorota Gil. [The hybrid method of inference system based on experts' rules and machine learning with an uncertainty aspect](#)
- 09:40 Przemyslaw Grzegorzewski and Anna Kozak. [Considerations on the Use of FDA Methods in Statistical Inference with Fuzzy Data](#)
- 10:00 (SP) Mehtap Dursun, Rana Duygu Alkurt and Nazli Goker. [Quality performance measurement of the most widely used e-commerce sites in Turkey](#)

Fr1C Advanced Data Analysis II

Chair: Uzay Kaymak

- 09:00 (SP) Valerijs Mihailovs. [Fuzzy Equivalence Relations as Similarity Measure in Agglomerative Clustering Algorithm](#)
- 09:20 Abdelhak Imoussaten and Jacky Montmain. [Interval Criterion Based Evidential Set-Valued Classification](#)
- 09:40 Nicolas Sutton-Charani and Francis Faux. [Evidential linear regression for soft Detrended Fluctuation Analysis](#)
- 10:00 Diogo Lima, Igor Danilo Costa Matos and Helder Gomes Costa. [A hybrid model with K-means and ELECTRE-III to analyze countries considering prosperity indicators](#)
- 10:20 Gonçalo Raposo, João Carvalho, Luísa Coheur and Bruno Martins. [Information retrieval using fuzzy fingerprints](#)

10:40 Coffee Break

11:00 Mário Figueiredo
[Causal Discovery from Observations: Overview and Some Recent Advances](#)

12:00 Closing session