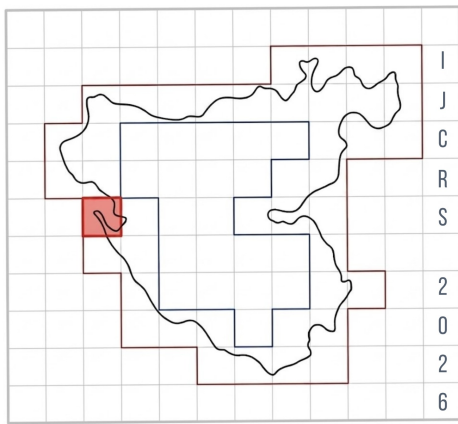
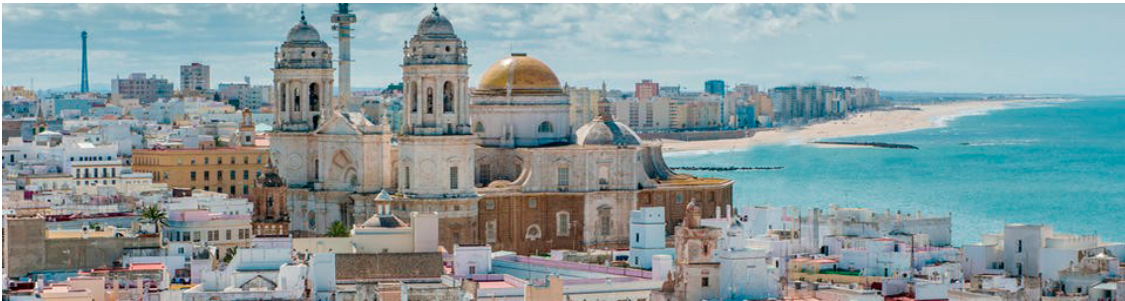


Program of the  
12<sup>th</sup> International Joint Conference on Rough Sets  
May 26<sup>th</sup> - 29<sup>th</sup>, 2026. Cádiz, Spain



Universidad de Cádiz  
Vicerrectorado de Investigación y Transferencia  
Departamento de Matemáticas  
Consejo Social  
Programa de Doctorado Interuniversitario en Matemáticas



<b>TUESDAY 26<sup>th</sup></b>	
<b>Location: Aulario “La Bomba”</b>	
8:30	Open Registration Desk
9:00–9:30	Inauguration
9:30–10:30	<b>Keynote Speaker - Didier Dubois</b> Title: Incomplete information, three-valued logics and formal concept analysis Chairperson: Jesús Medina
10:30–11:00	Coffee break
11:00–13:30	<b>Tutorials S1</b>
11:00–12:00	<i>Rule-Driven Pattern Discovery Across Data Representations</i> Beata Zielosko
12:00–13:30	<i>Modal Logics for Multigranulation Rough Set Models</i> Mohua Banerjee
11:00–13:30	<b>Workshops S1: Conceptual structures and set approximations: A dialogue between Formal Concept Analysis and Rough Sets</b> Chairperson: Manuel Ojeda-Hernández
	<i>Diagnosing Semantic Misalignment in Large Language Models through Fibered Fuzzy Concept Analysis</i> Ramos-González, V., Borrego-Díaz, J., Lara-Martín, F.
	<i>Triadic Context Simplification Based on Combination Reduction in TCA</i> Tian, Y., Wei, L., Zhang, Q., Qi, J.
	<i>On a fuzzy inference system based on the notion of f-inclusion</i> Madrid, N., Diaz-Montarroso, C., Ramírez-Poussa, E.
	<i>Concept multilattices for non-commutative conjunctors with truth-stressing hedges</i> Dongmo, G., Koguep Njionou, B., Onabid, M.
	<i>From Rough Sets to FCA: Evaluation of Rice-Siff-Selected Extents</i> Kotlárová, D., Antoni, Ľ., Krajčí, S., Eliaš, P., Guniš, J., Šnajder, Ľ.
	<i>Pseudo-intents as critical elements to attribute implication bases in multi-adjoint concept lattices</i> Cornejo, M., Medina, J., Ocaña, F.
	<i>Aggregating contexts using multi-adjoint bonds</i> Aragón, R., Medina, J., Molina-Ruiz, S.
13:30–14:30	Lunch

14:30–15:30	<b>Keynote Speaker - M. Eugenia Cornejo</b> Title: Decision Making in Fuzzy Rough Set Theory Chairperson: Roberto G. Aragón
15:30–19:30	<b>Tutorials S2</b>
15:30–17:30	<i>Fuzzy Relational Calculus as a Fundamental yet Powerful Concept</i> Martin Štěpnička
17:30–17:50	Break
17:50–19:20	<i>fcaR: FCA for Knowledge Extraction in Real-World Environments</i> Ángel Mora
15:30–17:00	<b>Workshops S2: Mesoscopic Cognitive Machine Learning</b> Chairperson: Ye Wang
	<i>A Controllable Multi-space Feature Disentanglement Framework for Open-Domain Dialogue Generation</i> Lei, Y., Wang, Y., Liao, J., Liu, Q., Qian, T., Wang, X., Yu, H.
	<i>A Survey on Multimodal Human-Machine Interaction in Smart Cockpits</i> Wang, Y., Wei, Z., Bin, W., Ke, L., Yu, H., Wang, G., Xiao, L., Qun, L., RunXi, Z.
	<i>Out-of-Distribution Detection using Mesoscopic Boundary-Constrained Generative Adversarial Networks</i> Yan, X., Hongru, C., Chenglin, Z., Yu, H., Qian, T.
	<i>Game-Theoretic Decision Rough Sets for Active Planning of Autonomous Vehicles in Dynamic Interactions</i> Wu, Z., Yu, H., Wang, Y., RunXi, Z.
17:00–17:30	Break
17:30–19:00	<b>Workshop S3: Soft Computing and Fuzzy Logic: Advances, Synergies, and Applications</b> Chairperson: Ignacio J. Pérez Gálvez
	<i>Deriving Dependency and Conflict Graphs from Configurable Software via Association Rules</i> Heradio, R., Fernandez-Amoros, D., Olivero, M., Sanchez, J., Cobo, M.
	<i>A Fuzzy Confidence Layer for Decision Modulation in AI-Based Monitoring Systems</i> Tejeda-Lorente, A., Perez, I., Porcel, C., Cabrerizo, F., Herrera-Viedma, E.
	<i>Adaptive AI Models for Group Decision-Making in Public Tax Inspection Prioritization</i> García-Valle, C., Barea-Rojo, J., Palla, D., Trillo, J., Krejcar, O., Pérez, I.
	<i>Towards ordinal sum of general operators to obtain fuzzy implications</i> Medina, J., Cordovilla, C., Jara, P., Aragón, R.
20:30	<b>Welcome reception</b>

**WEDNESDAY 27<sup>th</sup>**

**Location: Aulario “La Bomba”**

9:00–10:00	<b>Keynote Speaker - Francisco Herrera</b> Title: AI Safety through Fuzzy-Rough Boundary Modeling: Monitoring and Anomaly Detection in Open-World Systems. Chairperson: Chris Cornelis
10:00–10:30	Coffee break
10:30–12:00	<b>Plenary Panel - Commemorating the 100th anniversary of the birth of Zdzisław Pawlak</b> Panelists: Mohua Banerjee, Salvatore Greco, Ernestina Menasalvas, Hung Son Nguyen, Jing-Tao Yao, Yiyu Yao, Hong Yu, Beata Zielosko Chairperson: Dominik Ślęzak
12:00–13:20	<b>Regular Session S1</b> Chairperson: Ernestina Menasalvas
	<i>Concept-Dependent Granulation with Bootstrap and Smote Methods</i> Cybulski, R.
	<i>A Multi-Granularity Collaborative Genetic Algorithm for Truck-Drone Routing Problem</i> Hu, L., Wang, G., Liu, Q.
	<i>Granula: A Flexible Human-AI Collaborative Platform for Automated and Manual Decision Modeling</i> Artiemjew, P.
	<i>Three-Dimensional Path Planning Using Mereological Potential Field</i> Szapowska, A.
12:00–13:20	<b>Special Session - Rough Sets and Hybrid Theories: Models, Logic, and Applications</b> Chairperson: David Lobo
	<i>Normalized efficiency of decision algorithms in Fuzzy Rough Set Theory</i> Chacón-Gómez, F., Cornejo, M., Medina, J.
	<i>Mapper-based fuzzy rough sets</i> De Maeyer, W., Cornelis, C., Restrepo, M.
	<i>Diversity Clustering: A Soft Clustering Model Inspired by Ecological Diversity</i> Campagner, A., Ricotta, C., Ciucci, D.
	<i>Hybrid Neighborhood Rough Set via Consistency Sample Selection for Multi-granularity Interpretable Modeling</i> Yuan, K., Miao, D., Zhang, H., Wang, R.
13:20–15:30	Lunch

15:30–16:30	<b>Keynote Speaker - Xiaoling Wang</b> Title: Towards General Embodied AI: Spatio-Temporal Visual Reasoning from Egocentric Perspective Chairperson: Hong Yu
16:30–18:00	<b>Tutorial S3</b> <i>GrC Techniques on Simple Undirected Graphs</i> Federico Infusino
16:30–18:30	<b>Special Session - Three-Way Decision, Granular Computing, and Cognitive Intelligence</b> Chairperson: Aleksandra Szpakowska
	<i>Three-way decisions: an outsider perspective</i> De Maeyer, W., Cornelis, C., Restrepo, M.
	<i>Semantics of the Boundary Region in Three-way Classification</i> Li, Q., Hou, J., Chen, Y., Yao, Y.
	<i>An Ensemble Method for Constructing Three-Way Decision Rules with Granular Rough Sets</i> Shi, C., Hu, M., Yao, Y.
	<i>Conceptual Models for Imbalanced Classification Based on Three-Way Bayesian Confirmation.</i> Bayeh, F., Hu, M., Lingras, P.
	<i>Three-way conflict analysis: Feasible strategies based on fuzzy rough sets and regret theory</i> Liu, X., Lang, G., Xu, F.
	<i>Three-way conflict analysis within multi-scale situation tables.</i> Qin, R., Lang, G.
18:30–20:30	<b>Cádiz tour</b>

<b>THURSDAY 28<sup>th</sup></b>	
<b>Location: Aulario “La Bomba”</b>	
8:45–16:20	<b>Jerez Tour (including lunch)</b>
16:20–17:20	<b>Keynote Speaker - Salvatore Greco</b> Title: Knowing What We Don’t Know: Rough Set Approximation in Seven-valued Logic Chairperson: Davide Ciucci
17:20–18:20	<b>IRSS Talk- JingTao Yao</b> Title: The Rough Set Paradigm for Modern Decision Intelligence. Chairperson: Yiyu Yao
18:20–19:00	<b>IRSS Meeting</b>
20:30	<b>Gala Dinner</b>

**FRIDAY 29<sup>th</sup>**

**Location: Aulario “La Bomba”**

10:00–11:00	<b>Regular Session S2</b> Chairperson: Roberto G. Aragón
	<i>Game-Theoretic Shadowed Sets Based on Justifiable Granularity</i> Li, C., Yao, J.
	<i>A Comparative Study of Geometric Inductive Bias in Medical Ontologies</i> Jordan de Urries Ruiz, B., Hernandez Pérez, I., Menasalvas Ruiz, E.
	<i>Pattern Difference in Determining Similarity of Binary Vectors: A Rough Set Based Analysis</i> Dutta, S., Shin, J.
10:00–11:00	<b>Regular Session S3</b> Chairperson: Beata Zielosko
	<i>Application of a supervised fuzzy object selection algorithm for outlier identification</i> Paja, W., Kępski, M., Sarzyński, J.
	<i>Rough-Fuzzy Attribute Ranking via Fuzzy Eigenvector Computation</i> Vo, B., Nguyen, H.
	<i>Non-averaging generalization of Choquet-like Copula-based integral with application to fuzzy-rough rule-based classification systems</i> Hinojosa-Cardenas, E., Bollaert, H., Cornelis, C.
11:00–11:30	Coffee break
11:30–13:10	<b>Regular Session S4</b> Chairperson: Fernando Chacón Gómez
	<i>Strong and Weak Approximation Operators in Multi-Source Neighbourhood Systems</i> Ranjan, Talukdar, A., Khan, M.
	<i>Unified Arithmetic Operations for Linearly Correlated Fuzzy Numbers</i> Alijani, Z., Janeček, J., Števeliáková, P.
	<i>New Equivalence Relations in Rough Set Theory</i> Restrepo, M., De Maeyer, W., Cornelis, C.
	<i>Data Summaries as a Support for LLM-based Analytical Code Generation</i> Slezak, D., Wnuk, M.
	<i>A Formal Framework for Ontology-Driven Data Pre-processing Based on Information Systems over Ontological Graphs</i> Pancerz, K., Zieliński, K.
11:30–13:10	<b>Regular Session S5.</b> Chairperson: Mohua Banerjee
	<i>Scalable OWA-based FRNN for Multi-Class Imbalanced Classification</i> Chen, J., Luo, C., Chen, H., Li, T.
	<i>A probabilistic intersection measure for interval sets and its three-way decision model for image retrieval</i> Chen, Y., Liu, H.
	<i>Multi-granularity Anomaly Detection via Attribute Subset Sequences Based on Fuzzy Entropy</i> Qing, C., Li, Y., Yuan, T., Zhao, J., Li, X., Wan, J.
	<i>A Pessimistic Multi-Granulation Rough Bipolar Pythagorean Framework for Medical Decision-Making</i> Mubarak, A., Li, M., Li, X., Zhao, J., Li, X., Wan, J.
	<i>Granular-Ball Embedding Clustering with Local Structure Preservation.</i> Wang, Y., Shen, L., Xia, S.
13:10–15:00	Lunch
15:00–15:30	<b>Closing session</b>

Social Events	
<b>TUESDAY 26<sup>th</sup></b>	
20:30	<b>Welcome reception</b>
<b>WEDNESDAY 27<sup>th</sup></b>	
18:30-20:30	<b>Cádiz tour</b>
<b>THURSDAY 28<sup>th</sup></b>	
8:45-16:20	<b>Jerez tour</b>
20:30	<b>Gala dinner</b>
<b>FRIDAY 29<sup>th</sup></b>	
13:40-15:30	<b>Closing Session</b>