

MDAI 2022

modeling decisions

esade
RAMON LLULL UNIVERSITY

Institute for Data
Driven Decisions
(Esaded3)

The 19th International Conference on Modeling Decisions for Artificial Intelligence

[Sant Cugat, Catalonia, Spain](#) 30 August - 2 September, 2022
<http://www.mdai.cat/mdai2022>

30 August (Tuesday)

14:00 Inscriptions

14.45 Opening

15:00 – 16:20 Session 1. Aggregation and uncertainty

Chair: A. Honda

A Multi-Perceptual-Based Approach for Group Decision Aiding

Olga Porro Martorell, Núria Agell Jané, Mónica Sánchez Soler, Francisco J Ruiz Vegas

Fuzzy measures, scales, integrals, and distances

Shekhar Negi, Vicenç Torra

Semiring-valued fuzzy rough sets and colour segmentation

Jiří Močkoř, Petr Hurtik

Zero Additivization of a Monotone Measure on a Finite

Set *Ryoji Fukuda, Aoi Honda, Yoshiaki Okazaki*

16:30 – 17:00 Coffee break

17:00 – 19:00 Excursion (Sant Cugat)

31 August (Wednesday)

9:30 Plenary. Anna Monreale

Chair V. Torra

Explaining Black Box Classifiers by exploiting Auto-Encoders

10:30 – 11:00 Coffee break

11:00 – 11:40 Session 2. Uncertainty

Chair A. Valls

Stochastic Optimality Analysis for LP Problems under Uncertainty

Zhenzhong Gao, Masahiro Inuiguchi

Probabilistic Judgement Aggregation by Opinion Update

Magdalena Ivanovska, Marija Slavkovic,

11:50 – 12:50 Session 3. Privacy

Chair N. Ruiz

Geolocated Data Generation and Protection Using Generative Adversarial Networks

Hugo Alatrasta-Salas, Peter Montalvo-Garcia, Miguel Nunez-del-Prado, Julian Salas

Reducing membership inference attacks in federated learning

Sudipta Paul, Vicenç Torra

Explainability and privacy, finding a trade-off

Aso Bozorgpanah, Vicenç Torra

13:00 – 14:00 Lunch

14:00 – 18:30 Excursion (ALBA SINCROTON / Tibidabo)

1 September (Thursday)

9:30 Plenary. Anna Ginés

Chair N. Agell

The labor impacts of algorithmic management

10:30 – 11:00 Coffee break

11:00 – 12:00 Session 4. Privacy

Chair M. Nuñez del Prado

Bistochastic privacy

Nicolas Ruiz, Josep Domingo-Ferrer

Improvement of Estimate Distribution with Local Differential Privacy

Hikaru Horigome, Hiroaki Kikuchi

On federated learning and decision trees

Saloni Kwatra, Vicenç Torra

12:10 – 13:10 Session 5. Data science

Chair M. Ivanovska

Identification of Subjects Wearing a Surgical Mask from their Speech by means of x-vectors and Fisher Vectors *José Vicente Egas-López, Gábor Gosztolya*

Measuring Fairness in Machine Learning models via Counterfactual Examples

Rami Haffar, Ashneet Khandpur Singh, Josep Domingo-Ferrer, and Najeeb Jebreel

Re-Calibrating Machine Learning Models using Confidence Interval Bounds

Andrea Campagner, Lorenzo Famigliini, Federico Cabitza

13:10 – 14:30 Lunch

14:30 – 15:30 Session 6. Machine learning

Chair E. Armengol

An Analysis of Byzantine-Tolerant Aggregation Mechanisms on Model Poisoning in Federated Learning

Mary Roszel, Robert Norvill, and Radu State

Effective Early Stopping of Point Cloud Neural Networks

Thanasis Zoumpiskas, Maria Salamó, Anna Puig

DANKFE-I: a domain knowledge based algorithm for feature engineering
Tiago Afonso, Cláudia Antunes

15:30 – 16:00 Coffee break

16:00 – 17:00 Session 7. Data science

Chair Y. Kanzawa

Deep Attributed Graph Embeddings

Elisabetta Fersini, Simone Mottadelli, Michele Carbonera, Enza Messina

Dimensionality Reduction of Multivariate Spatio-Temporal Data using Pre-attentive

Features
Rui Maia, Cláudia Antunes

Detecting Mild Cognitive Impairment Using Fisher Vectors

José Vicente Egas-López, Réka Balogh, Nóra Imre, Ildikó Hoffmann, László Tóth, Magdolna Pákáski, János Kálmán,

Gábor Gosztolya

20:00 Gala Dinner

2 September

9:30 Plenary. Clara Granell.

Chair J. Nin

Mathematical Modeling of COVID-19 from a Complex Systems Perspective

10:30 – 10:50 Coffee break

10:50 – 11:50 Session 8. Fuzzy sets and systems

Chair M. Inuiguchi

Aggregation for Hesitant Fuzzy sets

Yasuo Narukawa, Vicenç Torra

The state of the art of fuzzy rule based systems: A discussion
Ayush Kumar Varshney, Vicenç Torra

Parametric Extension of q-Divergence-based Fuzzy Clustering for Spherical Data
Yuchi Kanzawa

12:00 – 13:00 Session 9. Machine learning

Chair C. Granell

Representation and Interpretability of IE Integral Neural
Networks *Aoi Honda, Yudai Kamata, Simon James*

Estimation of Prediction Error with Regression Trees
Eva Armengol

A Strategic Approach based on AND-OR Recommendation Trees for Updating Obsolete
Information *Salma Chaieb, Ali Ben Mrad, Brahim Hnich*

13:00 Closing ceremony

13:15 – 14:00 Lunch