

**The 21th International Conference on
Modeling Decisions for Artificial Intelligence**

Tokyo, Japan
August 27-31, 2024
<http://www.mdai.cat/mdai2024>

MDAI 2024
modeling decisions

August 27

13:30 Opening ceremony

14:00 - 15:00 Plenary: Prof. Homei Miyashita

Title: Taste Media: Innovative Technology Transforms the Eating Experience
Chair: Hiroaki Kikuchi

15:00 - 15:30 Coffee break

15:30 - 16:30 Session A: Data science 1

Chair: Yukihiro Hamasuna

Decision Tree Based Inference of Lightning Network Client Implementations
Pol Espinasa-Vilarrasa, Sílvia Sanvicente, Cristina Pérez-Solà, Jordi Herrera-Joancomartí

nuggets: Data Pattern Extraction Framework in R
Michal Burda

On Objective-Based Clustering from the Perspective of Transportation Problem
Yasunori ENDO, Kazuki MORI

15:30 - 16:10 Session B: Fuzzy measures and integrals 1

Chair: Serena Doria

An axiomatic definition of non-discrete Möbius transform
Ryoji Fukuda, Aoi Honda, Yoshiaki Okazaki

Shapley index and a variation for games and measures
Vicenç Torra

August 28

9:30 11:00 Plenary: In memory of Prof. Michio Sugeno -

Speakers: Yasuo Narukawa, Fujimoto, Zuzana Ontkovičová, Vicenç Torra

Title: The past and future of fuzzy measures and fuzzy integrals

Chairman: Yasuo Narukawa

11:00 - 11:20 Coffee break

11:20 - 12:20 Session A: Fuzzy measures and integrals 2

Chair: Zuzana Ontkovičová

Fuzzy Rough Choquet Distances

Adnan Theerens, Chris Cornelis

Fractal dimensions as Sugeno integrals of fractal outer measures with respect to the Lebesgue measure

Serena Doria

11:20 - 12:20 Session B: Privacy 1

Chair: Jordi Castellà-Roca

Bistochastically private release of data streams with zero delay

Nicolas Ruiz

Differentially Private Extreme Learning Machine

Hajime Ono, Tran Thi Phuong, and Le Trieu Phong

On the necessity of counterfeits and deletions for continuous data publishing

Adrian Tobar Nicolau, Javier Parra-Arnau, Jordi Forné

12:20 - 14:00 Lunch

14:00 - 15:00 Session A: Uncertainty 1

Chair: Núria Agell

Entropies from f-divergences

Mateu Sbert, Min Chen, Jordi Poch, Miquel Feixas, Shuning Chen

What Interaction Operators Are Good for IE Integrals?

Yoshihiro Fukushima, Katsushige Fujimoto, Aoi Honda

A new interaction index for bi-capacities

Jabbar Abbas and Mohammed Mousa

14:00 - 15:00 Session B: Privacy 2

Chair: Koji Chida

Performance of Healthcare Analysis Under LDP

Andres Hernandez-Matamoros, Hiroaki Kikuchi

Studying the impact of edge privacy on link prediction in temporal graphs

Julian Salas, Carlos Borrego

A Poisoning-Resilient LDP schema leveraging Oblivious Transfer with the Hadamard Transform

Masahiro Shimizu, Hiroaki Kikuchi

15:00 - 15:30 Coffee break

15:30 - 16:30 Session A: Uncertainty 2

Chair: Aoi Honda

A new consensus approach based on a large language model and sentiment analysis for multi-criteria group decision-making

José Ramón Trillo, Ignacio Javier Pérez, Enrique Herrera-Viedma, Juan Antonio Morente-Molinera, Francisco Javier Cabrerizo

Sincov's Equation for Fuzzy Implications with Uninorms

Michał Baczynski and Mateusz Pieszczyk

Inclusion-exclusion integral neural network using monotone regularization terms

Hina Anai, Simon James, Aoi Honda

15:30 - 16:30 Session B: Data science 2

Chair: Yuchi Kanzawa

Enhancing GP-based AutoML through Connectivity Constrained Optimization

Leiyi Yao, Xuanqi Liu, and Xing Zhao

Hierarchical Feature Interpretation of Machine Learning Models: Introducing OHAP Approach

Kenkou Yamashita, Katsushige Fujimoto, Aoi Honda

Communicative Agents for Software Project Management and System Development

Konrad Cinkusz, Jaroslaw Chudziak

August 29

9:30 - 10:30 Plenary: Javier Fernandez

Title: Extending fuzzy integrals to deal with uncertainty: the case of the computational brain

Chair: Vicenç Torra

10:30 - 11:00 Coffee break

11:00 - 12:00 Session A: Data science 3

Chair: Cristina Pérez-Solà

Hidformer: Transformer-Style Neural Network in Stock Price Forecasting

Kamil L. Szydlowski, Jaroslaw A. Chudziak

Revised Margin-Maximization Method for Fuzzy Nearest Prototype Classification

Yoshifumi Kusunoki

A comparative study of news perception on the Israel Gaza war using hesitant terms and sentiment analysis

Walaa Abuasaker, Jennifer Nguyen, Nil Agell, Núria Agell, Mónica Sánchez, and Francisco J. Ruiz

11:00 - 12:00 Session B: Privacy 3

Chair: Nicolas Ruiz

Experimental Evaluation for Risk Assessment of Privacy Preserving Synthetic Data

Koji Chida, Susumu Kakuta, Hiroyuki Itakura, Ichiro Ishihara, Kosuke Yoshioka, Hiroshi Takeuchi

Decentralized and Privacy-Preserving Digital Identities with Verifiable Credentials and Revocable Anonymity

Joan Ferré-Queralt, Jordi Castellà-Roca, Alexandre Viejo

Record Reconstruction Risk from LIME XAI Metrics

Ryotaro Toma, Hiroaki Kikuchi

12:10 - 14:00 Lunch

14:00 - 14:30 Session: Mini session with selected online short presentations

Dissimilar Similarities: Comparing Human and Statistical Similarity Evaluation in Medical AI

Federico Cabitza, Lorenzo Famiglioni, Andrea Campagner, Luca Maria Sconfienza, Stefano Fusco,

Valerio Caccavella, Enrico Gallazzi

15:00 - Departure for the excursion

16:00 - 17:00 Tokyo Edo Tatomono En (東京江戸たとも園)

18:00 - 20:00 Banquet

August 30

9:30 - 10:30 Plenary: Sadaaki Miyamoto

Title: Inductive Properties of Fuzzy Clustering

Chair: Masahiro Inuiguchi

10:30 - 11:00 Coffee break

11:00 - 12:20 Session A: Data science 4

Chair: Michal Burda

On Parameter-Extended q -Divergence-based Fuzzy Clustering for Categorical Multivariate Data
Yuchi Kanzawa

Sequential Cluster Extraction by Noise Clustering Based on Local Outlier Factor

Yukihiro Hamasuna, Yoshitomo Mori

Transforming Stock Price Forecasting: Deep Learning Architectures and Strategic Feature Engineering

Nguyen Quoc Anh, Ha Xuan Son

User-centred Argumentation Analysis of Local Explanations in Explainable AI

Nguyen Duy Hung, Van-Nam Huynh

12:20 Closing ceremony

12:30 - 14:00 Lunch