

MDAI 2021

modeling decisions

The 18th International Conference on
Modeling Decisions for Artificial Intelligence
Umeå, Sweden. September 27-30, 2021

MDAI 2021 – Instructions

Time. The program of the conference is given in Swedish time. That is, **CET – Central European Time.**

For your convenience (check correctness!) some other times are included below:

7:00 - 12:00 in CET Europe

---- this is 14:00 - 19:00 in Japan.

---- this is 22:00 - 03:00 in California

10:00 - 15:00 in CET Europe

---- this is 17:00 - 22:00 in Japan

---- this is 01:00 - 6:00 in California

All sessions are expected to start on their respective planned times. Within a session, talks are expected to take 20 minutes each (including questions). That is about 15 minutes for talk and 5 for questions. Within a session we will adapt schedules according to circumstances. That is, if there are internet connection problems, no-show, or any other problems we may skip a talk, and go on with the next one. **SUMMARY: Speakers should be available for the whole session!**

All talks are expected to be live. No prerecording. Nevertheless, this may not always be possible. If you can expect internet problems, contact us at mdai@mdai.cat. I will contact some authors myself in relation to this issue.

Session chairs will be at Umeå with Zoom rights to stop presenter's screen sharing and micro, in case of need!! Therefore, **keep your presentation within reasonable time limits.**

Zoom. We will use zoom for the conference. Zoom links will be provided at due time to registered participants. Registration is free and open to those interested. Paper presenters are already registered.

Monday 27th,

09:45 – 10:00 Opening ceremony

10:00 – 10:45 Invited talk. Title to be announced. Sonja Buchegger

11:00 – 12:00 Session 1. Data privacy and data science

Fair-ly Private Through Group Tagging and Relation Impact

Poushali Sengupta, Subhankar Mishra

MEDICI: A simple to use synthetic social network data generator

David F. Nettleton, Sergio Nettleton, Marc Canal i Farriol

Ensemble models to multispecies bioacoustic classification

Pedro Bonito Baptista, Cláudia Antunes

12:30 – 13:30 Session 2. Data science

Towards Machine Learning-Assisted Output Checking for Statistical Disclosure Control

Josep Domingo-Ferrer and Alberto Blanco-Justicia

Data-driven Business Understanding in the Fashion and Apparel Industry

Chandadevi Giri, Ulf Johansson

Spatial Role Labeling System Capturing Both Characters and Word Information Using BiLSTM and CRF

Alaeddine Moussa, Sebastien Fournier, Khaoula Mahmoudi, Bernard Espinasse, Sami Faiz

13:45 – 14:45 Session 3. Classification

Mass-based Similarity Weighted k-Neighbor for Class Imbalance

Anh HOANG, Toan NGUYEN MAU, Van-Nam HUYNH

Quantile Encoder: Tackling High Cardinality Categorical Features in Regression Problems

Carlos Mougán, David Masip, Jordi Nin, Oriol Pujol

Multinomial-based Decision Synthesis of ML Classification Outputs

Alan J. Michaels, Lauren J. Wong

Tuesday 28^h,

07:15 – 07:50 Invited talk. Are Sequential Patterns Shareable? Ensuring Individuals' Privacy.
Julián Salas.

08:00 – 09:00 Session 11. Clustering + Data science

Network Clustering with Controlled Node Size

Yukihiro Hamasuna, Shusuke Nakano, Yasunori Endo

Explaining Image Misclassification in Deep Learning via Adversarial Examples

Rami Haffar, Najeeb Moharram Jebreel, Josep Domingo-Ferrer, David Sánchez

Answer Passage Ranking Enhancement Using Shallow Linguistic Features

Bahadorreza Ofoghi, Armita Zarnegar

09:30 – 10:30 Session 8. Classification and data science

Evidential undersampling approach for imbalanced datasets with class-overlapping and noise

Fares Grina, Zied Elouedi, Eric Lefevre

Well-Calibrated and Sharp Interpretable Multi-Class Models

Ulf Johansson

Neural embedded Dirichlet Processes for topic modeling

Miguel PALENCIA-OLIVAR, Stéphane BONNEVAY, Alexandre AUSSEM, Bruno CANITIA

10:45 – 11:25 Session 9. Data science + Uncertainty

Probabilistic Prediction in scikit-learn

Dirar Sweidan, Ulf Johansson

Density-Based Evaluation Metrics in Unsupervised Anomaly Detection Contexts

Rui Maia, Cláudia Antunes

An Approximate Algorithm for the Chance Constrained POMDP Framework

Rashid Alyassi, Majid Khonji, and Khaled Elbassioni

Wednesday 29th.

10:00 – 10:45 Invited talk. Numerical semigroups, fractal division, the golden ratio and music.

Maria Bras

11:00 – 12:00 Session 7. Approximate reasoning

Decision analysis based on a pairwise comparison matrix showing rough relative importance

Masahiro Inuiguchi, Shigeaki Innan.

Multiple testing of conditional independence hypotheses using information-theoretic approach

Małgorzata Łazęcka, Jan Mielniczuk

A Bayesian Interpretation of the Monty Hall Problem with Epistemic Uncertainty

Cristina Manfredotti, Paolo Viappiani

12:30 – 13:30 Session 10. Clustering

Automated Attribute Weighting Fuzzy k-Centers Algorithm for Categorical Data Clustering

Toan Nguyen Mau, Van-Nam Huynh

q-Divergence Regularization of Bezdek-Type Fuzzy Clustering for Categorical Multivariate Data

Yuchi Kanzawa

Automatic Clustering of CT Scans of COVID-19 Patients Based on Deep Learning

Pierluigi Bemporato, Gabriella Casalino, Giovanna Castellano, Gennaro Vessio

13:45 – 14:45 Session 12. Data science

Pedestrian Intention Recognition and Action Prediction Using a Feature Fusion Deep Learning Approach

Omar Hamed, H. Joe Steinhauer

Measuring Tourist Places Attractiveness through Credit and Debit Card Transactions

Leibnitz Rojas-Bustamante, Hugo Alatrística-Salas, Miguel Nunez-del-Prado, Vincent Gauthier

Thursday, 30th

07:15 – 07:45 Invited talk. Andness-Directed Iterative OWA Aggregators. Jozo Dujmovic.

08:00 – 09:00 Session 4. Decision making and aggregation functions

Numerical comparison of idempotent andness-directed aggregators

Jozo Dujmovic

On Two Generalizations for k -additivity

Ryoji Fukuda, Aoi Honda, Yoshiaki Okazaki

Sequential decision-making using hybrid probability-possibility functions

Didier Dubois, H el ene Fargier, Romain Guillaume, Agn es Rico

09:30 – 10:30 Session 5. Fuzzy Sets and Systems

Prioritization of the Healthcare System Indices for Organ Transplantation by using a fuzzy Based Integrated Methodology

Fatma Kutlu G UNDOĐDU, Melike ERDOĐAN, Ali KARAŐAN, İhsan KAYA

Fuzzy Zero Forcing Set for Finding Influential Nodes in Social Networks

Laya Aliahmadipour, Ezat Valipour

Derivation of Acceptance Sampling Plans by using Interval Type-2 Fuzzy Sets

G urkan IŐık, İhsan Kaya

10:45 – 11:45 Session 6. Fuzzy Sets and Systems

How the F-transform can be defined for hesitant, soft or intuitionistic fuzzy sets?

Jiri Mockor

Enhancing social recommenders with implicit preferences and fuzzy confidence functions

Camilo Franco, Nicol as Hern andez, Haydemar N u nez

A Necessity Measure of Fuzzy Inclusion Relation in Linear Programming Problems

Zhenzhong Gao, Masahiro Inuiguchi

11:45 – 12:00 Closing ceremony