

FUZZ-IEEE2023 Special Session: Fuzzy Machine Learning

2023 IEEE International Conference on Fuzzy Systems
Songdo Incheon, Korea | August 13-17, 2023



CALL FOR PAPERS

FUZZ-IEEE2023: The Annual IEEE International Conference on Fuzzy Systems, well known as FUZZ-IEEE, is one of the premier international conferences in the field of fuzzy sets and systems. FUZZ-IEEE2023 will be held in the Songdo International City, a Free Economic Zone located approximately 15 minutes away by car from the Incheon International Airport and an hour from Seoul, making it pleasant and convenient venue for business as well as for touring the Seoul metropolitan area. It is rising as one of the hottest places in Korea in terms of tourism, culture, leisure, MICE (Meeting, Incentive trip, Convention, Exhibition & Event), and shopping. This complex cultural space provides sharing of happiness to all visitors.

Special Session Abstract: Machine learning has gained great achievements and popularity in many areas, including image recognition, traffic prediction, self-driving cars, medical diagnosis, automatic language translation, and more. And the success of machine learning methods relies heavily on precise data and a stable environment. However, real-world problems often suffer from many different types of uncertainty, especially imprecise data and changing environment, and traditional machine learning models lack the ability to handle such uncertainty, provide interpretable models, and offer a flexible and robust mechanism to support dynamic environment. Fuzzy sets, fuzzy logic and fuzzy systems are well renowned for their capability to model uncertainty, enhance models' interpretability and offer an efficient and flexible way of representing data and navigating prediction models. Thus, the integration of machine learning and fuzzy techniques is prevailing and has gained great success in many areas, e.g. fuzzy neural networks, fuzzy clustering, and fuzzy transfer learning.

This special session aims to provide a forum for researchers in the fuzzy machine learning field to share the latest advantages in the integration of fuzzy techniques and machine learning methods, especially how fuzzy techniques help machine learning methods in handling uncertainty, enhancing interpretability and improving robustness.

Topics:

In this session, we aim to study the theories, models, algorithms and application of fuzzy machine learning and provide a platform to host novel ideas based on the integration of machine learning algorithms and fuzzy sets, fuzzy logic and fuzzy systems. The main topics of this special session include, but are not limited to, the following:

- Fuzzy technique-based feature selection and extraction
- Fuzzy rule-based knowledge representation in machine learning
- Fuzzy classification, fuzzy regression, and fuzzy clustering
- Fuzzy transfer learning
- Fuzzy concept drift
- Fuzzy neural networks to modelling complex problems
- Fuzzy support vector machine
- Fuzzy decision trees
- Fuzzy modelling for handling uncertainties in machine learning models
- Methods to improve models' interpretability using fuzzy techniques
- Methods to enhance models' robustness using fuzzy techniques
- Granular clustering, modelling and control
- Fuzzy techniques for aggregation, combination and information fusion in machine learning models
- Fuzzy machine learning based decision support
- Applications in transport, ICT, healthcare, business intelligence and more.

Paper Submission:

<https://fuzz-ieee.org/authors/submissions>

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Important dates and deadlines:

Submission deadline: February 15, 2023

Notification of acceptance: April 15, 2023

Camera-ready paper submission: June 1, 2023

Conference date: August 13-17, 2023