

Special Issue

Applications of Machine Learning and Pattern Recognition

Message from the Guest Editor

This Special Issue aims to highlight recent advances in the mathematical foundations, algorithmic innovations, and practical applications of machine learning and pattern recognition. We welcome contributions that explore theoretical models, optimization strategies, and performance analysis, as well as interdisciplinary applications in areas such as signal processing, computer vision, biomedical engineering, and financial mathematics. Topics of interest include, but are not limited to, the following:

- Mathematical modelling of learning algorithms;
- Pattern recognition theory and applications;
- Optimization and convergence analysis;
- Neural architectures and interpretability;
- Multi-task and transfer learning;
- Statistical learning and probabilistic inference;
- Applications in image, speech, and time-series data;
- Hybrid systems and modular design frameworks.

We invite original research articles, review papers, and short communications that advance the understanding and application of ML and pattern recognition from a mathematical perspective.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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