

Special Issue

Advances in Statistical Machine Learning: Interpretability, Explainability and High-Performance Algorithms

Message from the Guest Editors

Machine learning is transforming numerous scientific disciplines, yet its practical adoption in high-stakes domains often depends on the interpretability and explainability of predictive models. This Special Issue aims to explore cutting-edge developments in statistical machine learning, with a particular focus on enhancing the transparency, robustness, and efficiency of algorithms. We invite both theoretical advancements and innovative applications, with the latter requiring a strong justification for their originality and impact. The key topics of interest include, but are not limited to, the following:

- Statistical approaches in machine learning
- Interpretability and explainability
- High-performance algorithms
- Integration of large language models (LLMs) in predictive tasks
- Textual analysis and machine learning
- Causal machine learning
- Application-driven machine learning

Guest Editors

Prof. Dr. Fabrizio Maturo

Faculty of Economics, Universitas Mercatorum, 00186 Rome, Italy

Dr. Elvira Romano

Dipartimento di Matematica e Fisica, Università degli Studi della Campania Luigi Vanvitelli, 81100 Caserta, Italy

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Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

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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.

Editor-in-Chief

Prof. Dr. Francisco Chiclana

School of Computer Science and Informatics, De Montfort University,
The Gateway, Leicester LE1 9BH, UK

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