

Special Issue

Advances in Machine Learning and Mathematical Modelling for Data-Driven Discovery

Message from the Guest Editors

This Special Issue invites high-quality research that bridges mathematical modelling with modern machine learning to address real-world data challenges. We welcome innovative studies on predictive and generative modelling, representation learning, and explainable AI that enhance model reliability, interpretability, and scalability. Submissions emphasizing mathematical and statistical frameworks that improve generalization, support uncertainty quantification, or integrate domain knowledge are particularly encouraged. Applications in health, biology, social sciences, and engineering are welcome, especially those demonstrating the synergy between mathematics and machine learning in advancing diagnosis, forecasting, decision-making, and scientific discovery. Contributions on visual analytics and interpretable visualization are also of great interest, as they play a vital role in transforming data into insight and supporting evidence-based reasoning. The goal is to highlight cutting-edge research that combines theoretical rigor with practical impact in the era of data-driven science.

Guest Editors

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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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