Special Issue

Mathematical Methods in Machine Learning and Computer Vision

Message from the Guest Editor

During the recent five years, there has been a surge in the application of mathematical methods to advance the frontiers of machine learning and computer vision. This Special Issue aims to provide a comprehensive overview of these developments, focusing on integrating mathematical and statistical tools with machine learning and computer vision techniques to solve complex problems in various scientific domains. The topics of interest for publication in this Special Issue include but are not limited to, the exploration of AI-for-science models, such as Physics-Informed Neural Networks (PINNs), Kolmogorov-Arnold Networks (KANs), Optical Neural Networks (ONNs), for approximating solutions to mathematical formulae such as PDEs, discovering physical laws, solving geometry problems, and advancing AI reasoning. Overall, this Special Issue aims to present a broad range of research articles demonstrating the power and potential of mathematical methods in driving forward the frontiers of machine learning and computer vision for scientific applications.

Guest Editor

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Deadline for manuscript submissions

31 July 2025

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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