Special Issue

Statistical Machine Learning and Bayesian Methods with Imaging Applications

Message from the Guest Editor

Bayesian modeling and statistical inference in machine learning are essential due to their significant importance in uncertainty quantifications and robustness. Ensuring the robustness and interpretability of machine learning models has emerged as a pivotal requirement for rigorous frameworks and data analysis that improve reliability and performance across diverse imaging and computer vision applications. Imaging applications include medical imaging, remote sensing, autonomous systems, augmented reality, and many more. Bayesian theory provides a principal and mathematically grounded approach to quantifying the predictive uncertainty inherent in machine learning models and various imaging data modalities. Additionally, these techniques enable researchers to create adaptable models that can generalize to intricate, complex relationships within features, infer latent variables, and achieve state-of-the-art predictive performance.

Thank you for your time, and I look forward to receiving your contributions.

Guest Editor

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Deadline for manuscript submissions

20 September 2025

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.6

mdpi.com/si/228479

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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.

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