Special Issue

Artificial Intelligence Applications with Advanced Mathematical Methods

Message from the Guest Editors

The field of Artificial Intelligence (AI) harnesses advanced mathematical methods and holds promise for applications in various domains such as Smart Healthcare, Computer Vision, Natural Language Processing and Information Security. Mathematics forms the foundation for developing sophisticated AI systems, with concepts and computations like linear algebra, probability, statistics, and gradient descent being the core underpinnings. By applying these principles, AI techniques have made significant progress because of feasible mathematical solutions to hypothetical or virtual problems in various domains. However, a key challenge in AI research is effectively extracting valuable knowledge from large and complex datasets. There is also growing concern within the AI community about the trustworthiness of AI systems. The AI community has developed numerous advanced mathematical methods to address these challenges. This Special Issue aims to showcase the latest scientific research on the fundamental theory and application issues of AI and Machine Learning (ML) techniques, specifically focusing on their use of advanced mathematical methods.

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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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