Special Issue

Optimization Algorithms, Distributed Computing and Intelligence

Message from the Guest Editor

The study of optimization algorithms such as gradient descent has a long history. Nowadays, they are widely applied in machine learning, especially in deep learning, where their analysis encounters new challenges. Theoretically, new research topics include understanding the optimization algorithms' performance on non-linear models such as deep neural networks and the implicit bias of different optimizers, related to generalization and intelligence. In practice, issues facing deep learning, especially large models, that are worth studying include how to scale hyperparameters efficiently and design robust model optimizers. We seek papers on insightful approaches to analyzing optimization algorithms, distributed computing intelligence in deep learning and large language models, and any other novel method for advancing these models.

Guest Editor

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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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