Special Issue

Advances in Neural Networks and Their Applications

Message from the Guest Editor

In recent years, we have experienced tremendous change in the field of neural networks driven by groundbreaking innovations in Large Language Models (LLMs). In fact, these models, along with other cutting-edge neural architectures, are redefining our ability to process complex data. This, in turn, allows us to face new, unprecedented challenges. From self-driving cars to digital transformations in business and industry, neural networks have become the cornerstone of various innovations. This Special Issue of *Mathematics* aims to collect the most recent discoveries in the field of neural networks, with particular emphasis on theoretical foundations, algorithmic innovations, and advanced applications. The objective is to explore the intersection between mathematics and neural network research, highlighting both fundamental progress and practical implementations that address real-world challenges.

Guest Editor

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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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