# Special Issue

## Artificial Neural Networks: Design and Applications

### Message from the Guest Editors

Deep learning, a major driving force behind artificial neural networks, has achieved remarkable progress in the field of image recognition, speech processing, machine translation, and board games. In particular, deep learning has drastically outperformed traditional methods and overtaken them to become the choice in different applications. However, many traditional network structures may not be able to deal with the increasing challenges of modern complex tasks, especially on non-structural data and complicated decision-making problems. To resolve this problem, various neural network structures and algorithms have been proposed in recent years, such as graph neural networks, spiking neural networks, and deep reinforcement learning. This Special Issue will focus on state-of-the-art neural network models, innovative learning methods, and applications. We seek contributions that include but are not limited to:

- Graph neural networks
- Deep neural networks
- Spiking neural networks
- Computer vision
- Natural language processing
- Bayesian methods
- Multi-agent reinforcement learning
- Brain-inspired artificial neural networks

### Guest Editors

Prof. Dr. Hong Qu

Dr. Malu Zhang

Dr. Mingsheng Fu

### Deadline for manuscript submissions

closed (31 October 2023)

# 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.

### Editor-in-Chief

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