# Symmetry/Asymmetry in Neural Networks

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## Message from the Guest Editors

Dear Colleagues,

In the rapidly evolving field of Artificial Intelligence, the concepts of symmetry and asymmetry in neural networks have garnered significant attention. These concepts play a crucial role in the design, function, and performance of various types of neural networks, including static neural networks (SNNs), recurrent neural networks (RNNs), and deep learning architectures.

Symmetry in neural networks often relates to the architecture's ability to respond identically to identical inputs, regardless of their orientation or position, enhancing the network's generalization capabilities. Conversely, introducing asymmetry, whether in data representations, network architectures, or learning algorithms, can lead to a more specialized and efficient processing of complex and variable data sets.

Special Issue

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## Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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