Special Issue

Application of Symmetry/Asymmetry and Machine Learning

Message from the Guest Editors

The Special Issue “Application of Symmetry/Asymmetry and Machine Learning” will investigate the critical roles that symmetry and asymmetry play in advancing machine learning. Symmetry and asymmetry influence key aspects such as data representation, feature extraction, classification, and anomaly detection. This Issue invites research on the innovative uses of these properties to improve the efficiency, security, and scalability of learning systems. By leveraging symmetry, models can achieve more robust and generalizable representations, while asymmetry can reveal unique patterns for specialized tasks. Contributions may explore both theoretical frameworks and practical algorithms that make effective use of these principles. The Special Issue also examines how symmetry-oriented approaches can support automated machine learning, enabling systems to discover and exploit invariances without human intervention. Ultimately, this collection aims to deepen our understanding of symmetry and asymmetry in machine learning and to inspire new directions for research and real-world applications.

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About the Journal

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.

Editor-in-Chief

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