

Special Issue

Symmetries and Applications in Machine Learning

Message from the Guest Editors

Such invariant patterns we would like to learn are powerful for constructing an efficient machine learning model. A key insight is that a learning system should reflect these symmetries to be effective. Thereby, this Special Issue concentrates on recent advancements in theoretical aspects or practical applications across widespread domains, such as computer vision, natural language processing, biomedical computing, mechanical engineering, and edge computing, ultimately enabling the creation of more intelligent, reliable, and physically plausible AI systems. We are pleased to invite you to publish your reviews and regular research articles within this Special Issue, titled “Symmetries and Applications in Machine Learning”. The original research achievements having sufficient experiments and theoretical analysis are highly encouraged to be submitted to this Special Issue. This Special Issue aims to present and aggregate research achievements that fall into symmetry study in model design, data processing, and algorithm optimization about machine learning or deep neural networks and their applications in biomedicine, mechanics, computer vision, etc.

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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.

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