Special Issue

Symmetry/Asymmetry in Artificial Intelligence

Message from the Guest Editor

With the development of Artificial Intelligence technologies, especially in the fields of machine learning and deep learning, research on data symmetry and asymmetry has begun in various domains, such as image recognition, object detection, speech recognition, natural language understanding, and more. Significant progress has been made in utilizing the symmetry and asymmetry properties of data in machine learning and deep learning, including techniques for increasing training data by exploiting these properties, quantifying symmetry and asymmetry attributes through domain transformations, and adding symmetry or asymmetry constraints in model optimization. Furthermore, researchers have started using machine learning and deep learning to study data symmetry and asymmetry in multiple fields to aid in solving various problems. When building predictive models using machine learning and deep learning, data may exhibit symmetry or asymmetry constraints. Effectively utilizing these symmetric and asymmetric properties can lead to the development of better machine learning and deep learning models...

Guest Editor

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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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