



*symmetry*

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## Symmetry in Artificial Visual Perception and Its Application

Guest Editor:

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### Message from the Guest Editor

Dear colleagues,

Symmetry in human neural structure has a great impact on perception. People tend to perceive an object based on salient visual regularity. The concept of symmetry is often adopted in a deep neural network to construct an efficient network structure tailored for a specific task. With the enormous advancement in artificial intelligence, artificial intelligence in visual perception does better than humans in some specific tasks. However, even the tasks which are known to be highly successful using artificial intelligence often fail in the presence of unexpected uncertainty. Even though many researches in artificial visual perception have studied object classification or segmentation, artificial visual perception is starting to make progress in cyber-physical systems with the convergence of other fields such as control or robotics. In the future, a virtual human with artificial vision capabilities beyond the human biological vision system is expected...



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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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