

Special Issue

Symmetry in Vision II

Message from the Guest Editors

Symmetry plays a central role in both natural and artificial vision systems. It is an important cue to biological fitness, so detecting symmetry, even in the presence of out-of-plane rotations, is a useful adaptive trait. Biological visual processing shows a degree of lateralization rather than the two hemispheres processing information in exactly the same manner, balancing the cost of maintaining duplicate and redundant visual processing in both hemispheres against the gains of the differential specialization. Understanding the pattern processing abilities of the right and left hemispheres could lead to improved understanding of the function of symmetry in nature. Measurement of (a)symmetry is important in a number of domains including aesthetics, biometrics, health, biology research or manufacturing quality control. Exploiting symmetry can help to make the training or application of vision systems, such as deep convolutional neural networks, more efficient and the resulting systems more compact. This Special Issue is devoted to cutting edge studies on how symmetry is, or can be, measured and exploited by biological and artificial visual systems.

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Deadline for manuscript submissions

closed (29 December 2021)



Symmetry

an Open Access Journal
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Impact Factor 2.2
CiteScore 5.3



mdpi.com/si/31864

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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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