

Special Issue

Symmetry and Asymmetry in Computer Vision and Pattern Recognition

Message from the Guest Editor

Symmetry and asymmetry are fundamental structural properties that widely exist in both natural and artificial systems. In the field of computer vision, they carry significant theoretical and practical value. Symmetry often manifests as geometric repetition, balance, or predictability, and can serve as a structural prior in deep neural networks to enhance generalization and robustness in tasks such as object detection, image segmentation, 3D reconstruction, pose estimation, and image generation. By contrast, asymmetry frequently reveals salient regions, structural abnormalities, or semantic discrepancies within visual data, and is widely applied in anomaly detection, change detection, face recognition, and medical image analysis. Recent advances increasingly integrate symmetry modeling with deep learning architectures to improve the structural understanding and interpretability of visual systems. This Special Issue aims to bring together the latest research advances on the modeling, analysis, and application of symmetry and asymmetry in computer vision and pattern recognition.

Guest Editor

Dr. Li Yuan

School of Automation and Electrical Engineering, University of Science and Technology Beijing, Beijing 100083, China

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Symmetry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

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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

Prof. Dr. Sergei Odintsov

1. ICREA, 08010 Barcelona, Spain

2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

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