Special Issue

Symmetry in Deep Learning and Neural Networks

Message from the Guest Editors

This Special Issue explores the role of symmetry and asymmetry in neural networks and deep learning, emphasizing their theoretical foundations and practical applications. Symmetry principles are central to improving model efficiency, generalization, and robustness across diverse data modalities. Topics of interest include invariance and equivariance in data representations, symmetry-aware architectures, symmetry-breaking strategies, and optimization techniques for advanced neural models. Applications span computer vision, natural language processing, biomedical imaging, robotics, and 3D data analysis. Contributions addressing challenges in handling symmetric or skewed data distributions and their implications in real-world scenarios are particularly encouraged. This Special Issue aims to foster interdisciplinary collaboration and highlight cutting-edge research driving the future of intelligent systems.

Guest Editors

Prof. Dr. Alfonso Ramirez-Pedraza

Department of Image Analysis, Research Center for Applied Science and Advanced Technology (CICATA), National Polytechnic Institute, Queretaro, Mexico

Prof. Dr. José Joel González-Barbosa

Department of Image Analysis, Research Center for Applied Science and Advanced Technology (CICATA), National Polytechnic Institute, Queretaro, Mexico

Deadline for manuscript submissions

31 May 2026

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/254156

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

mdpi.com/journal/symmetry

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/journal/symmetry

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

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within SCIE (Web of Science), Scopus, CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Multidisciplinary Sciences) / CiteScore - Q1 (General Mathematics)

MDPI