

Special Issue

Symmetry-Inspired Approaches in Control, Robotics, and Intelligent Systems

Message from the Guest Editors

Recent advances in control engineering, robotics, and intelligent systems increasingly leverage symmetric and asymmetric structures in both modeling and algorithmic design. Symmetry principles can be found in physical system dynamics, controller architectures, optimization frameworks, and learning-based decision mechanisms. Likewise, asymmetry may be intentionally introduced to enhance robustness, ensure stability under disturbances, or improve adaptability in uncertain and nonlinear environments. This Special Issue aims to gather contributions that explore how symmetry—or deliberate asymmetry—can be exploited in the analysis, design, optimization, and implementation of control strategies, robotic systems, and intelligent decision-making algorithms. Both theoretical developments and practical applications are welcome, including methodologies based on fuzzy logic, neural networks, evolutionary computation, model-based control, hybrid AI techniques, and cyber-physical implementations.

Guest Editors

Dr. José R. García-Martínez
Dr. Alejandro Medina Santiago
Dr. Mario González-Lee

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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
ICREA, 08010 Barcelona and Institute of Space Sciences (IEEC-CSIC),
C. Can Magrans s/n, 08193 Barcelona, Spain

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