Special Issue

Symmetry and Asymmetry in Artificial Intelligence and Machine Learning-Based Image Processing

Message from the Guest Editors

In AI and machine learning-based image processing, *symmetry* and *asymmetry* are fundamental properties that significantly impact pattern recognition, feature extraction, and algorithmic performance. This Special Issue, "Symmetry and Asymmetry in Artificial Intelligence and Machine Learning-Based Image Processing", explores how these properties can enhance modern computational imaging systems. We welcome innovative research contributions that advance our understanding of how AI and ML algorithms can effectively leverage symmetrical and asymmetrical patterns encompassing both theoretical frameworks and practical applications. Of particular interest are cutting-edge approaches to symmetry detection, asymmetric pattern recognition, and their real-world applications across diverse domains, including medical imaging, autonomous driving, computer vision, and industrial automation. We seek submissions that demonstrate how symmetry and asymmetry principles can improve the robustness, efficiency, and performance of AI-driven image processing solutions.

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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

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