

## Special Issue

# Applications Based on Symmetry in Image Processing and Optimization

### Message from the Guest Editors

This Special Issue on "Applications Based on Symmetry in Image Processing and Optimization" explores the crucial role of symmetry in enhancing image analysis and optimization tasks. Symmetry in deep learning and machine learning is a powerful tool in image processing, particularly in areas such as remote sensing imaging, where it aids in improving the accuracy and efficiency of tasks like image segmentation, reconstruction, and denoising. Researchers can design algorithms that more effectively handle complex image data, such as in remote sensing, MRI, X-ray, PET, and ultrasound imaging. Symmetry-based approaches help maintain structural integrity in images while reducing noise and improving resolution, which is especially important in diagnostic imaging. This issue highlights advancements in symmetry-based methodologies that contribute to the development of innovative techniques for image enhancement and analysis. Furthermore, the application of symmetry in optimization algorithms allows for more efficient computational processes, which is vital for processing large-scale imaging datasets.

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### Guest Editors

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Dr. Minghua Wang  
Dr. Jing Yao

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### Deadline for manuscript submissions

closed (31 January 2026)



## Symmetry

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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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### Editor-in-Chief

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