

# Special Issue

## Symmetry/Asymmetry in Artificial Intelligence for Point Cloud Data Processing

### Message from the Guest Editors

With the development of 3D acquisition techniques, e.g., Kinect and LiDAR, point cloud data are becoming more and more popular and are being increasingly used in many applications, such as 3D reconstruction, simultaneous localization and mapping (SLAM), building information management (BIM), automatic drive, virtual reality (VR), and augmented reality (AR). In order to better serve these applications, symmetry and asymmetry intelligent point cloud data processing plays a crucial role. Owing to different kinds of nuisances (including noise, density variation, occlusion, clutter, data missing, etc.) in the point clouds and complex scanning environment, the point cloud data processing faces great challenge. Therefore, point cloud data processing should be paid much attention, which is the topic of this Special Issue. (1) Point cloud registration; (2) Symmetry/Asymmetry and Point cloud segmentation; (3) 3D object recognition; (4) Road object extraction and classification; (5) Building contour extraction; (6) Registration of point cloud and image; (7) Place recognition based on point cloud. We look forward to receiving your contributions.

### Guest Editors

Dr. Wuyong Tao

Dr. Xijiang Chen

Dr. Yufu Zang

### Deadline for manuscript submissions

1 November 2025



## Symmetry

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### 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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