Symmetry in Pattern Recognition

Guest Editor:

Prof. Dr. Jianfeng Ren
School of Computer Science, Faculty of Science and Engineering, University of Nottingham Ningbo China, Ningbo, Zhejiang, China

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Message from the Guest Editor

Dear Colleagues,

Symmetry is ubiquitous from subatomic particles to natural patterns, man-made design, art, and mathematics. This Special Issue aims to demonstrate: 1) how pattern recognition algorithms have specially contributed, and are contributing, to datasets and tasks which have the characteristic of symmetry; and 2) how symmetrically-designed pattern recognition algorithms are advantageous to some domain-specific tasks.

The editors hope to collect about 10 research/review papers which report the recent developments on symmetry in the field of visual recognition, visual understanding, image/video processing, natural language processing, or any other areas on pattern recognition. For example, many symmetric deep convolutional neural networks, such as UNet, auto-encoder, and generative adversarial network, have a symmetric network design.

Special Issue

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

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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