Special Issue

Symmetry/Asymmetry in Evolutionary Computation and Machine Learning

Message from the Guest Editors

- Evolutionary computation (EC), a family of algorithms inspired by biological evolution for global optimization, has been developed for a few decades. Machine learning (ML) is one of the most engaging research and application areas within computer science today.Its ability to find patterns, clusters, and hidden knowledge from data has allowed us to understand, model, and predict the behaviors of complex systems. Nowadays, symmetry and asymmetry play important roles in various aspects of EC and ML. These concepts can be applied to algorithm design, problem representation, and solution optimization.
- This Special Issue aims to explore the current impact, advances, and applications of symmetry/asymmetry in EC and ML. For either EC or ML, understanding and exploiting symmetry can lead to more efficient algorithms, while recognizing and addressing asymmetry is crucial for the robustness and generalization of algorithms or models.
- We invite submissions on recent advances in the theory and applications of evolutionary computation and machine learning that explore the role of symmetry and asymmetry.

Guest Editors

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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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