Special Issue

Symmetry in Optimization Algorithms and Applications

Message from the Guest Editor

This Special Issue, *"Symmetry in Optimization Algorithms and Applications",* examines how symmetry, present in many optimization problems, impacts the efficiency and performance of algorithms. It explores methods to identify and leverage symmetries to simplify problems, reduce search spaces, and speed up convergence. Practical applications are discussed in fields such as mathematical programming, artificial intelligence, and combinatorial optimization. The Issue will also address challenges such as breaking unnecessary symmetries to avoid redundant solutions and ensuring algorithm robustness in real-world scenarios.

Guest Editor

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Symmetry

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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