Special Issue

Advanced Computational Intelligence for Complex Problems

Message from the Guest Editor

The rapid evolution of computational intelligence (CI) has revolutionized problem-solving in domains characterized by uncertainty, nonlinearity, and high-dimensional data. This Special Issue aims to highlight cutting-edge advancements in CI methodologies, including evolutionary algorithms, fuzzy systems, neural networks, deep learning, and hybrid models, that address the challenges of complex real-world problems.

- Evolutionary and swarm-based optimization for complex problems (e.g., multi-objective, dynamic, large-scale, expensive, multi-task, constrained, multi-level optimization);
- Deep neural architectures (e.g., transformers, CNNs, and GANs) and learning methods for complex learning tasks and complex systems;
- Fuzzy logic and rule-based systems in decision-making under uncertainty;
- Hybrid CI methods such as symbolic reasoning, metaheuristics, and machine learning for complex problem-solving (e.g., LLM, automated design, generative AI, and cognitive systems);
- Application studies in various fields (e.g., transportation, healthcare, autonomous systems, scheduling, manufacturing, design, energy management, and climate modelling).

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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