Special Issue

Advanced Approaches to Mathematical Programming: Exact Methods, Metaheuristics, and Machine Learning Synergies

Message from the Guest Editors

Addressing complex real-world optimization challenges necessitates the application of advanced solution methodologies in mathematical programming. This Special Issue "Advanced Approaches to Mathematical Programming: Exact Methods, Metaheuristics, and Machine Learning Synergies", aims to explore diverse methodologies and innovative integrations moving this field forward. By focusing on both individual techniques and their hybridization, this issue seeks to uncover synergies that enhance the efficiency, accuracy, and scalability of solving optimization problems. The scope of this Special Issue includes exact methods, metaheuristics, machine learning techniques, and their combinations, applied to both single and multi-objective optimization problems. This synergy is beneficial for addressing complex challenges in fields like logistics, finance, engineering design, and artificial intelligence. We invite papers that delve into theoretical advancements, practical applications, and innovative integrations. Contributions highlighting novel algorithms, case studies, comparative analyses, and interdisciplinary research that bridge these approaches are especially welcome.

Guest Editors

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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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