

Special Issue

Heuristic Optimization and Machine Learning, 2nd Edition

Message from the Guest Editor

Generative AI is reshaping research, but optimization remains essential for solving complex problems involving search, constraints, uncertainty, and decision-making. The integration of machine learning and heuristic optimization is creating new opportunities for intelligent and adaptive systems. This Special Issue welcomes original research and review articles on recent advances at the intersection of optimization and machine learning. Topics include (but are not limited to):

- Machine learning for heuristic and metaheuristic optimization
 - Reinforcement learning for adaptive search and control
 - Surrogate-assisted and data-driven optimization
 - Large language models for optimization and algorithm design
 - Algorithm selection and automated configuration
 - Machine learning for automatic algorithm selection
 - Neural combinatorial optimization
 - Hybrid optimization–learning frameworks
 - Multiobjective optimization with learning components
 - Learnheuristics, meta-learning, and transfer learning
 - Explainable, robust, and trustworthy optimization
 - Applications in engineering, logistics, healthcare, finance, energy, and scientific discovery
- Original research and review papers are welcome.

Guest Editor

Dr. Antonio Bolufé-Röhler

School of Mathematical and Computational Sciences, University of Prince Edward Island, 550 University Ave, Charlottetown, PE C1A 4P3, Canada

Deadline for manuscript submissions

30 April 2027



Mathematics

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 4.6



mdpi.com/si/281337

Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

[mdpi.com/journal/
mathematics](https://mdpi.com/journal/mathematics)





Mathematics

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 4.6



[mdpi.com/journal/
mathematics](https://mdpi.com/journal/mathematics)



About the Journal

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.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University,
The Gateway, Leicester LE1 9BH, UK

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:

JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.3 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).