Mathematical Modeling, Optimization and Machine Learning

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Deadline for manuscript
submissions:
closed (30 September 2023)

Message from the Guest Editors

The Special Issue of *Mathematics* is devoted to topics in mathematical modeling, optimization methods, and various machine learning approaches. Submitted papers should satisfy the general requirements of t h e *Mathematics* journal, with a strong focus on new analytic or numerical methods for solving challenging problems. Potential topics include but are not limited to:

- Mathematical foundations of machine learning;
- New machine learning algorithms, approaches, and architectures of neural networks;
- Mathematical models and machine learning;
- Data analysis based on mathematical models, optimization, and machine learning algorithms;
- Mathematical models, optimization techniques, and machine learning algorithms in applied sciences;
- Statistical models and stochastic processes;
- Continuous and discrete optimization, linear and nonlinear optimization, derivative-free optimization;
- Deterministic and stochastic optimization algorithms;
- Numerical simulation in physical, social, and life sciences;
- High-performance computing for mathematical modeling;
- Application of machine learning, mathematical modeling, and optimization in science and technology.

Special Issue

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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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