Special Issue

Data-Driven Artificial Intelligence and Optimization for Real-World Applications

Message from the Guest Editor

In the era of pervasive data and intelligent connectivity, the integration of data-driven artificial intelligence with optimization and control strategies is revolutionizing system perception, reasoning, and decision-making. This Special Issue aims to showcase advances in AI models and optimization frameworks that combine deep learning, predictive control, graph-based reasoning, and multimodal data fusion for real-world applications such as autonomous driving, precision agriculture, and remote sensing. We invite contributions focused on theoretical innovation and practical deployment, particularly those leveraging tools such as moving horizon strategies, joint chance-constrained optimization, self-organizing maps (SOMs), and attention-based neural representations. Topics include anomaly detection, real-time perception, spatiotemporal prediction, and decision-making under uncertainty. This Special Issue provides a multidisciplinary platform bridging machine learning, operations research, remote sensing, and control engineering. We welcome work that is robust, scalable, cross-domain, and interpretable, driving forward the intelligent AI-powered optimization landscape.

Guest Editor

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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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