Special Issue

Mathematical and Statistical Approaches in Quantitative Finance with Applications in AI, Machine Learning, and Reinforcement Learning

Message from the Guest Editor

This Special Issue aims to explore the synergy between advanced mathematical finance, statistical methodologies, and modern computational approaches in the ever-evolving field of quantitative finance. As financial markets become increasingly complex and data-driven, techniques such as artificial intelligence, machine learning, and reinforcement learning are redefining how we model, analyze, and predict financial phenomena. We welcome contributions that integrate mathematical finance frameworks, including stochastic processes, partial differential equations, and risk-neutral valuation, with AI-driven methodologies to address challenges related to portfolio optimization, algorithmic trading, risk management, and derivative pricing. We also welcome submissions that highlight theoretical advancements or real-world applications, such as Bayesian modeling, deep learning for financial prediction. By integrating classical mathematical finance with novel technologies, this Special Issue seeks to foster innovation and provide a comprehensive platform for advancing quantitative finance in the age of intelligent systems. Dr. Enrique Ter Horst

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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