

Special Issue

Advances in Algorithm Theory and Computer Networks

Message from the Guest Editors

This issue seeks to bridge the gap between theory and practice, highlighting the interplay between mathematics, algorithmic theory, and computer networks. Submissions should focus on novel algorithmic theories, computational frameworks, and network architectures that ensure network scalability, efficiency, and adaptability. Contributions should emphasize mathematical rigor while addressing real-world applicability. We welcome the submission on topics including, but not limited to: machine learning for algorithmic challenges in networks, applications of reinforcement learning, deep learning, and federated learning for adaptive network management, anomaly detection, and security in large-scale networks; information-theoretic approaches, game-theoretic models and results, equilibrium analysis for multi-agent systems and competitive network environments; distributed and centralized algorithms for NP-hard problems in networks; next-generation network architectures, architectures supporting low latency and high-bandwidth applications; the theoretical and practical challenges of future networks, and energy efficiency, security, and resilience in decentralized, self-organizing systems.

Guest Editors

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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.

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