

Special Issue

Computational Algorithms and Models for Graph Problems

Message from the Guest Editor

This Special Issue focuses on developments in computational methods for graph algorithms and models, a rapidly expanding area at the intersection of theoretical computer science, data science, and artificial intelligence. Graphs provide powerful abstractions representing complex relationships and interactions in domains ranging from social networks and bioinformatics to recommendation systems and cybersecurity. Consequently, graph-based methods have gained attention, particularly with the rise of machine learning on graphs, graph mining, and scalable analytics. Our aim is to bring together cutting-edge research that presents novel algorithms, innovative modeling paradigms, and practical applications of graph-based approaches. In addition to classical graph algorithms (e.g., pathfinding, connectivity, and matching), we encourage submissions addressing graph neural networks (GNNs), graph embeddings, and other advanced techniques that integrate traditional graph theory with modern machine learning and deep learning frameworks. Of particular interest are real-world use cases, large-scale datasets, and computational solutions that highlight efficiency, accuracy, and interpretability.

Guest Editor

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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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