Special Issue

Application of Parallel and Distributed Computing

Message from the Guest Editor

Recent advances in Big Data, AI, ML, Generative AI, and High-Performance Computing (HPC) are reshaping computational science and its applications. Together with parallel and distributed systems, cloud and edge computing, and scalable algorithms, these technologies provide powerful tools to address complex, large-scale, and data-intensive challenges. Applications span diverse domains, including scientific simulations, weather forecasting, financial modeling, operations, and smart cities, where intelligent and generative approaches enable data-driven decision-making, efficiency, and creativity. This Special Issue seeks to bring together cutting-edge research on foundational methods, novel algorithms, innovative architectures, frameworks, and practical implementations in parallel and distributed computing. Application-oriented contributions are encouraged, particularly those that demonstrate how advances in computational science and generative AI can be translated into impactful real-world outcomes. By bridging theory and practice, this collection aims to advance the state of the art and provide insights broadly applicable across multiple domains.

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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