Special Issue

Mathematical Models for Data Privacy in Blockchain-Enabled Systems

Message from the Guest Editor

As blockchain technologies are increasingly adopted across sectors, ensuring data privacy in decentralized systems has become a critical challenge. Mathematical modeling plays a key role in addressing this, providing frameworks for secure computation, verifiable data handling, and privacy guarantees. This Special Issue invites contributions on mathematical models for data privacy in blockchain-enabled systems, with applications in finance, IoT, supply chains, energy, and digital identity. We seek both foundational research and applied methodologies that tackle privacy issues in decentralized architectures. Topics of interest include (but are not limited to):

- Formal privacy models for blockchain systems
- Differential privacy and secure multiparty computation
- Privacy-preserving smart contracts and zero-knowledge proofs
- Game-theoretic and cryptographic approaches to data governance
- Decentralized learning and privacy optimization
- Real-world applications in IoT, logistics, and finance

We welcome both theoretical advancements and case studies that demonstrate the applicability of mathematical methods in real-world blockchain-enabled environments.

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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