

Demystifying Blockchains and the Challenges of Fault-tolerance, Transparency and Privacy in Large Scale Data.

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Significant paradigm shifts are occurring in the way data is accessed and updated. Data is “very big” and distributed across the globe. Many of the fundamental challenges have been studied and explored by the distributed systems, the database and the security/privacy/crypto communities for decades. However, the current changing setting often requires a rethinking of basic assumptions and premises. The need for transparency and accessibility while using non-trustworthy resources has led to innovative ways for managing large scale replicated logs and ledgers, giving rise to blockchains and their many applications. In this talk, we start by developing an understanding of the basic protocols used in blockchain, and elaborate on their main advantages and limitations. To overcome these limitations, we will ponder over recent efforts to use blockchains in diverse applications while highlighting the challenges in managing large scale fault-tolerant, private data.