BLOCKBENCH: A Framework for Analyzing Private Blockchains

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Outline

- **Introduction**
  - Backgrounds
  - Problem Statement
  - Related Works
- **BlockBench Framework**
  - System Design
  - Implementation
- **Performance Benchmark**
  - Macro Benchmarks
  - Micro Benchmarks
- **Discussion**
- **Conclusion**

Acknowledgement: many diagrams are owned by internet users which we use only for illustration purposes

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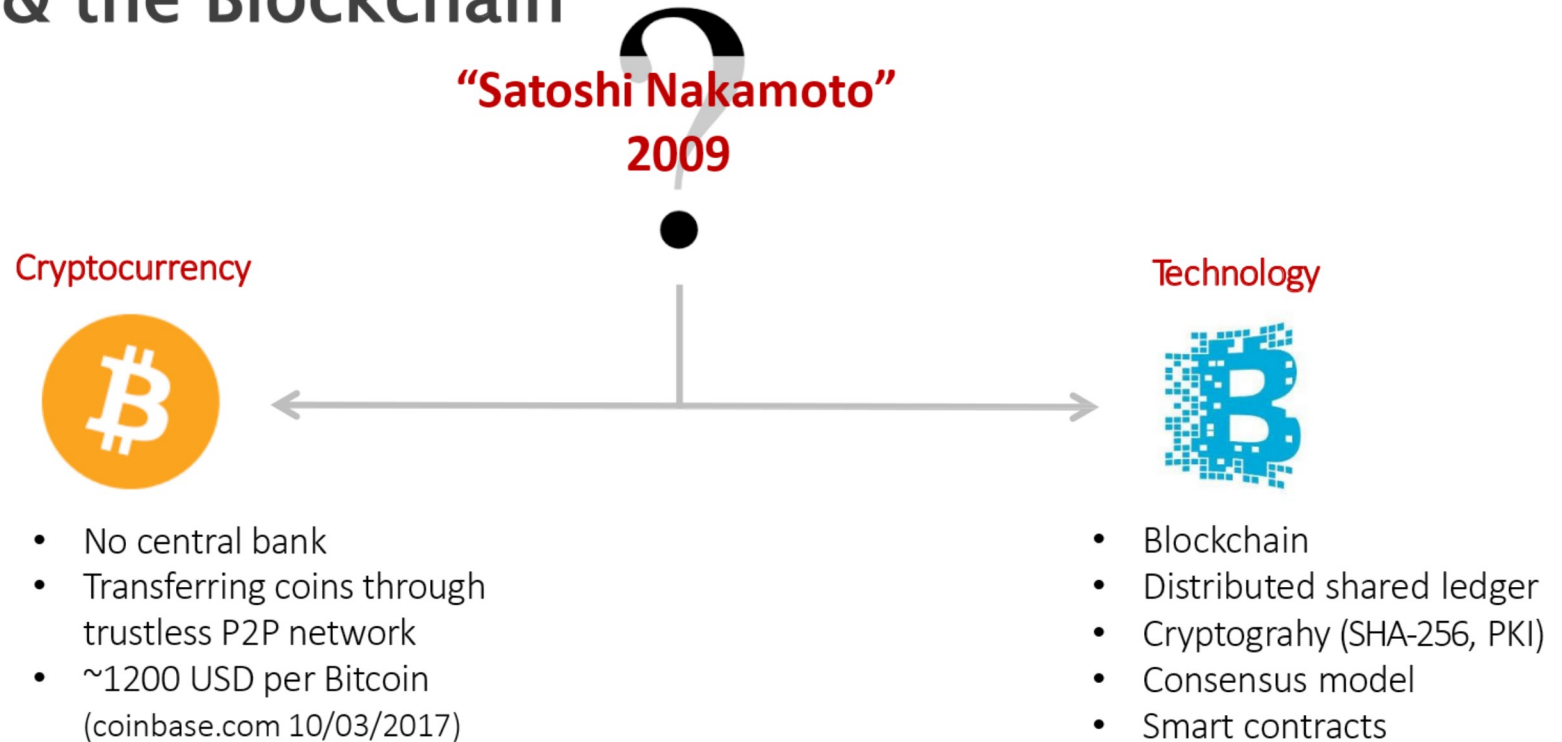 - Micro Benchmarks
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Backgrounds

Bitcoin & the Blockchain

"Satoshi Nakamoto"
2009

Cryptocurrency

- No central bank
- Transferring coins through trustless P2P network
- ~1200 USD per Bitcoin
  (coinbase.com 10/03/2017)

Technology

- Blockchain
- Distributed shared ledger
- Cryptograhy (SHA-256, PKI)
- Consensus model
- Smart contracts

Backgrounds

Blockchains

Blockchains are **distributed** ledgers – or **decentralized** databases – that enable parities who do **not fully trust** each other to form and maintain **consensus** about the existence, status and evolution of a set of **shared facts**.