Yifan Zhou

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Education

Huazhong University of Science and Technology Sept 2023 – June 2027 (Exp.)
Ph.D. Candidate in Computer Science *Wuhan, China*

Huazhong University of Science and Technology Sept 2022 – June 2023
M.S. in Computer Science *Wuhan, China*

Huazhong University of Science and Technology Sept 2018 – June 2022
B.S. in Software Engineering *Wuhan, China*

Research Interests

Blockchain, BFT Protocol, Cross-chain Protocol, Incentive Mechanism

Projects

Asynchronous DAG-based Consensus Jan 2023 – Dec 2023

- Developed a fully asynchronous DAG-based BFT protocol, emphasizing the use of best-effort broadcast to achieve a lower latency. Published a research paper on this topic, which was accepted by IEEE TIFS.
- Integrated with other critical network, execution, and sharding modules to construct a blockchain system.

Blockchain Interoperability Jan 2024 – Nov 2024

- Established an atomic framework for cross-chain transactions beyond financial atomicity by constructing a middle two-phase commit layer with smart contract logic. Logics are implemented with the Cosmos contract, implemented in Rust. Published a research paper on complete atomicity, which was accepted by SRDS' 24.
- Formulated an acceleration protocol for multi-hop cross-chain transactions through off-chain execution, targeting exchanges between two assets that are not directly linked.

Transaction Fee Mechanism Research Dec 2024 – Present

- Established a control theoretic model for blockchain transaction fee mechanisms, analyzing the stability.
- Derived the closed-form stability analysis, helping permissionless blockchains with parameter tuning.

Publications

As primary contributor:

- **Yifan Zhou**, Jiang Xiao, Xiaohai Dai, and Hai Jin, "PlainDAG: A Low-Latency Asynchronous DAG BFT Protocol With Best-Effort Broadcast," *IEEE TIFS*, 2025.
- Yuandi Cai, Ru Cheng, **Yifan Zhou**, Shijie Zhang, Jiang Xiao, and Hai Jin, "Enabling Complete Atomicity for Cross-chain Applications Through Layered State Commitments," *SRDS*, 2024.

As participant:

- Feng Cheng, Jiang Xiao, Cunyang Liu, Shijie Zhang, **Yifan Zhou**, Bo Li, Baochun Li, and Hai Jin, "Shardag: Scaling DAG-based blockchains via adaptive sharding," *ICDE*, 2024.
- Xiaohai Dai, **Yifan Zhou**, Jiang Xiao, Feng Cheng, Xia Xie, Hai jin, and Bo Li, "GeckoDAG: Towards a lightweight DAG-Based blockchain via reducing data redundancy," *ICDCS*, 2023.