Jintong Liu

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Education

Huazhong University of Science and Technology, Wuhan, China 09/2019 – 06/2022

M.Eng (Academic Degree) in Computer Architecture
Academic focus / background:
Blockchain, distributed systems, storage/file systems, smart contract, consensus

Huazhong University of Science and Technology, Wuhan, China 09/2015 – 06/2019

B.Eng. in Electronic Science and Technology, GPA: 3.93/4, Rank: 4/156

Publications

- **Jintong Liu**, Shenggang Wan, Xubin He. Alias-Chain: Improving Blockchain Scalability via Exploring Content Locality among Transactions, in: 36th IEEE International Parallel and Distributed Processing Symposium (**IPDPS '22**), Lyon, France, 30 May – 3 June 2022, IEEE. (Published)
- **Jintong Liu**, Chenglong Yi, Shenggang Wan, Juntao Fang, Bin Sun, Liqiang Zhang and Changsheng Xie. Data Deduplication Based on Content Locality of Transactions to Enhance Blockchain Scalability. Transactions on Architecture and Code Optimization (**TACO**), ACM. (Submitted)

Experience

Memo Lab Wuhan, China

Research Engineer 06/2022 – now

- Developed the production version of *Alias-Chain* by Golang, as an optimization module integrated in Ethereum. Achieved 60%-80% on-chain data shrinkage, while ensuring the compatibility and security.
- Designed frameworks and implemented modular services: (a) "Indexer" for monitoring blockchains' states and specified smart contracts. (b) "Decentralized Profile" to store users' profiles on-chain and off-chain using smart contracts and decentralized storage network. (c) Providing image search in decentralized storage network using vector database and ResNet.

Blockchain Storage Research Center Wuhan, China

Graduate Research Assistant 09/2019 – 06/2022

- Investigated blockchains' architecture, consensus, data structure, etc.
- Proposed *Alias-Chain* to scale out blockchains, designed and conducted experiments on a 100-machines cluster to verify the effectiveness of the scheme.
- Made an oral presentation of *Alias-Chain* at the conference (IPDPS '22).

Memo Lab Wuhan, China

Research Intern 06/2021 – 06/2022

- Implemented consistency protocol "hotstuff", fixed some practical problems out of the paper version, achieved higher performance and non-rollback consensus by introducing lightweight optimizations.
- Designed and implemented interfaces of "Sparse Merkle Tree" for state transition and validation in state machines, fixed some unconsidered critical problems in the original scheme.

Intelligent Electronics Institute Wuhan, China

Undergraduate Research Assistant 05/2017 – 09/2017

- Assisted in developing computing and simulation platform.
- Designed and implemented a scheme for grid computing in genetic algorithm.

Research Interests

My research interests lie in computer architecture and distributed systems, specifically in the optimization of decentralized systems and consistency protocols. Currently, I work on designing frameworks for blockchain-based services and implementing practical consensus/structure for state transition.

Additional Info and Skills

Programming Languages: Golang, Python, C/C++, Solidity, Shell, JavaScript, Perl (ranked by proficiency)
Tools and Frameworks: Git, LaTeX, Docker, Makefile, MySQL, Kafka, HDFS, AWS S3