陈之豪 Zhihao Chen

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SUMMARY

Currently a final year Ph.D. candidate at School of Data Science and Engineering, East China Normal University, majoring in blockchain data management, dedicated in building high-performance, reliable, secure ledger systems. Strong expertise in blockchain systems, databases and interest in cryptography with experienced coding skills and open source project maintenance experience (founder of a 3k+ stars GitHub repo).

EDUCATION

East China Normal University (School of Data Science and Engineering) 2019.9 – 2024.7
Ph.D. in Software Engineering (Expected) Advisor: Prof. Zhao Zhang & Prof. Cheqing Jin

Shanghai University (School of Computer Engineering and Science) 2015.9 – 2019.7
Bachelor of Computer Science

INTERN EXPERIENCE

Academic Cooperation Intern 2020.9 – 2021.4
C++ Golang 蚂蚁集团-智能科技事业群-区块链平台部-区块链存储技术部

Software Engineer Intern 2018.6 – 2018.8
Objective-C Swift Java 招商银行信用卡中心-O2O 技术团队

RESEARCH INTERESTS

- Deterministic concurrency control protocols for high-performance transactional smart contract execution.
- Efficient, amplification-reduced authenticated data storage.
- Blockchain data analytics systems and on-chain privacy preserving query processing.

PUBLICATIONS

Complete List: Google Scholar[guxaYEoAAAAJ] - DBLP [Zhihao Chen 0003]
[1] X. Qi, **Z. Chen**, H. Zhuo, Q. Xu, C. Zhu, Z. Zhang, C. Jin, A. Zhou, Y. Yan, H. Zhang, "SChain: Scalable Concurrency over Flexible Permissioned Blockchain", in Proceedings of the 39th IEEE International Conference on Data Engineering (**ICDE 2023**), pp. 1901-1913, California, USA, April, 2023, Full Paper.
[2] Y. Liu, L. Yuan, **Z. Chen**, Y. Yu, Z. Zhang, C. Jin, Y. Yan, "ChainDash: An Ad-Hoc Blockchain Data Analytics System", in Proceedings of the 49th International Conference on Very Large Data Bases (**VLDB 2023**), pp. 4022-4025, Vancouver, Canada, August, 2023, Demo Paper.
[3] **Z. Chen**, Q. Li, X. Qi, Z. Zhang, C. Jin, A. Zhou, "BlockOPE: Efficient Order-Preserving Encryption for Permissioned Blockchain", in Proceedings of the 38th IEEE International Conference on Data Engineering (**ICDE 2022**), pp. 1245-1258, Kuala Lumpur, Malaysia, May, 2022, Full Paper.
[4] **Z. Chen**, H. Zhuo, Q. Xu, X. Qi, C. Zhu, Z. Zhang, C. Jin, A. Zhou, Y. Yan, H. Zhang, "SChain: A Scalable Consortium Blockchain Exploiting Intra- and Inter-Block Concurrency", in Proceedings of the 47th International Conference on Very Large Data Bases (**VLDB 2021**), pp. 2799-2802, Copenhagen, Denmark, August, 2021, Demo Paper.
[5] **Z. Chen**, X. Qi, X. Du, Z. Zhang, C. Jin, "PEEP: A Parallel Execution Engine for Permissioned Blockchain Systems", in Proceedings of the 26th International Conference on Database Systems for Advanced Applications (**DASFAA 2021**), Part III, pp. 341-357, Taipei, China, April, 2021, Full Paper.
[6] X. Qi, **Z. Chen**, Z. Zhang, C. Jin, A. Zhou, H. Zhuo, Q. Xu, "A Byzantine Fault Tolerant Storage for Permissioned Blockchain", in Proceedings of the 40th ACM SIGMOD International Conference on Management of Data (**SIGMOD 2021**), pp. 2770-2774, Xi'an, China, June, 2021, Demo Paper.

Manuscripts

[1] **Z. Chen**, T. Yang, Z. Zhang and C. Jin.“Spectrum: Scaling Transactional Smart Contracts for Permissioned Blockchain Ledgers under Conflicts”, Full Paper, undergoing.
[2] **Z. Chen**, L. Yuan, Y. Yu, Y. Liu, Z. Zhang, C. Jin, Y. Yan, A. Zhou,“GraphSword: An Ad-Hoc Blockchain Data Analytics System for Knowing Your Transactions”, Full Paper, Submitted to ICDE 2024.

Project Experience

• 面向区块链数据的用户自定义在线分析系统 2022.1 – 2023.1

Collaborated with Blockchain Platform Division, Ant Group

- Designed and implemented highly-parallelized data synchronization and a retrieval-optimized graph store
- Developed an ad-hoc blockchain data analytics system supporting efficient ad-hoc graph analytics
- Partial results are demonstrated in VLDB'23 and submitted to ICDE'24

• 面向单合约大规模账户的存储及智能合约并发执行机制 2020.4 – 2021.4

Collaborated with Blockchain Platform Division, Ant Group

- Participated in integrating erasure coding to BFT-based data storage
- Designed a flexible architecture for scaling consortium blockchains
- Integrated deterministic concurrency controls for parallel smart contract execution
- Resulted to several research papers published in SIGMOD'21, VLDB'21 and ICDE'23

• 新型区块链体系架构设计理论与方法 2021.12 – present

National Key Research and Development Program of China

- Explore the opportunities in optimizing deterministic concurrency control protocols with weaker assumptions, superior performance, and better robustness

Honors and Awards

研究生国家奖学金 教育部 2021.10
云赛智联奖学金 华东师范大学数据学院企业奖学金 2020.12
优秀学员 2020 VLDB Summer School 2020.07
一等奖 第九届蓝桥杯 Java A 组全国总决赛 2018.05
银奖 中国大学生程序设计竞赛 (CCPC) 秦皇岛赛区 2017.10