Jiacheng Shen

Ph.D Student, The Chinese University of Hong Kong
Email: jcshen@cse.cuhk.edu.hk, Tel/WeChat: (+86) 135-1213-8818

Research Interests

Jiacheng's research interests span memory systems, distributed systems, and cloud computing. Specifically, he is devoted to building high-performance and resource-efficient cloud storage systems using modern and emerging hardware, *e.g.*, disaggregated memory. His recent work focuses on improving the efficiency and reliability of storage systems on disaggregated memory. During his Ph.D. studies, he has already published 9 papers in major conferences and journals in the areas of computer systems and software engineering, including SOSP, OSDI, FAST, ASE, ICDCS, DSN, etc.

Education

The Chinese University of Hong Kong — Hong Kong SAR, China
Ph.D in Computer Science and Engineering — *2020.08 – Present*

- ARISE Lab, Computer Science and Engineering Department
- Supervised by Prof. Michael R. Lyu (IEEE fellow and ACM fellow)

Fudan University — Shanghai, China
BSc. in Computer Science — *2016.09 – 2020.06*

- Overall GPA: 3.78/4.0; Ranking: 1/155

Working Experience

Huawei Cloud — Shenzhen, China
Research Intern — *2021.09 – Present*

- Research on replication protocols for storage systems on disaggregated memory.
- Construct an adaptive caching framework for storage systems on disaggregated memory.
- Integrate disaggregated memory into Redis.

Fudan University — Shanghai, China
Research Assistant — *2020.08 – 2021.07*

- Tracing and debugging for RDMA-based distributed systems.
- Mitigating cold starts for serverless platforms.

Microsoft — Shanghai, China
Software Development Intern — *2019.10 – 2020.01*

- Data analytics for maintaining Dynamics365.
- Develop visualization and deployment tools for Dynamics365.

Honors and Awards

National Scholarship
Fudan University — *2019*

Scholarship for Outstanding Students
Fudan University — *2017 – 2020*

Publications

1. Jiacheng Shen, Pengfei Zuo, Xuchuan Luo, Yuxin Su, Jiazhen Gu, Hao Feng, Yangfan Zhou, and Michael R. Lyu. Ditto: An Elastic and Adaptive Memory-Disaggregated Caching System. In *29th ACM Symposium on Operating Systems Principles (To appear), SOSP 2023*, **CCF-A**.

2. Jiacheng Shen, Pengfei Zuo, Xuchuan Luo, Tianyi Yang, Yuxin Su, Yangfan Zhou, and Michael R. Lyu. FUSEE: A Fully Memory-Disaggregated Key-Value Store. In *21st USENIX Conference on File and Storage Technologies, FAST 2023*, **CCF-A**.

3. Xuchuan Luo, Pengfei Zuo, Jiacheng Shen, Jiazhen Gu, Xin Wang, Michael R. Lyu, and Yangfan Zhou. SMART: A High-Performance Adaptive Radix Tree for Disaggregated Memory. In *17th USENIX Symposium on Operating Systems Design and Implementation, OSDI 2023*, **CCF-A**.

4. Jiacheng Shen, Tianyi Yang, Yuxin Su, Yangfan Zhou, and Michael R. Lyu. Defuse: A Dependency-Guided Function Scheduler to Mitigate Cold Starts on FaaS Platforms. In *41th International Conference on Distributed Computing Systems, ICDCS 2021*, **CCF-B**.

5. Tianyi Yang, Jiacheng Shen, Yuxin Su, Xiaoxue Ren, Yongqiang Yang, and Michael R. Lyu. Characterizing and Mitigating Anti-patterns of Alerts in Industrial Cloud Systems. In *52nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks, DSN 2022*, **CCF-B**.

6. Tianyi Yang, Jiacheng Shen, Yuxin Su, Xiao Ling, Yongqiang Yang, and Michael R. Lyu. AID: Efficient Prediction of Aggregated Intensity of Dependency in Large-scale Cloud Systems. In *36th IEEE/ACM International Conference on Automated Software Engineering, ASE 2021*, **CCF-A**.

7. Tianyi Yang, Baitong Li, Jiacheng Shen, Yuxin Su, Yongqiang Yang, and Michael R. Lyu. Managing Service Dependency for Cloud Reliability: The Industrial Practice. In *33rd IEEE International Symposium on Software Reliability Engineering Workshops, ISSRE 2022 Workshops*, **CCF-B**.

8. Shuyao Jiang, Jiacheng Shen, Shengnan Wu, Yu Cai, Yue Yu, and Yangfan Zhou. Towards Usable Neural Comment Generation via Code-Comment Linkage Interpretation: Method and Empirical Study. *IEEE Transactions on Software Engineering, TSE 2023*, **CCF-A**.

9. Tianyi Yang, Cheryl Lee, Jiacheng Shen, Yuxin Su, Yongqiang Yang, and Michael R. Lyu. An Adaptive Resilience Testing Framework for Microservice Systems. In *arXiv preprint*, 2022.