Yiyu Liu

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Education

Shanghai Jiao Tong University (SJTU), Shanghai, China Aug 2021 – Jun 2025

Student in the **ACM Honor class**, GPA: **3.91**/4.3. *B.Eng. in Computer Science*

Harvard University, Cambridge, MA, USA Sep 2025 – Present

PhD Student in Computer Science, advised by **Prof. Juncheng Yang** and **Prof. Minlan Yu**.

Publications

FaaSMem: Improving Memory Efficiency of Serverless Computing with Memory Pool Architecture (ASPLOS'24)

Authors: Chuhao Xu, **Yiyu Liu**, Zijun Li, Quan Chen, Han Zhao, Deze Zeng, Qian Peng, Xueqi Wu, Haifeng Zhao, Senbo Fu, Minyi Guo.

Research Experience

Research interests: cloud computing, operating systems.

Emerging Parallel Computing Center, SJTU, Shanghai, China Sep 2023 – Jun 2024

Undergraduate researcher, advised by **Prof. Quan Chen**. *Topic: cloud computing*

- (ASPLOS'24) Explored the memory footprint under serverless condition and proposed a new mechanism tailored for serverless containers to improve memory efficiency. The system yields up to 71.0% reductions in local memory usage and a maximum 2.2× more deployment density.
  - **Role in the project:** designed the strategy to effectively and efficiently offload pages together with Chuhao; conducted experiments; wrote the paper with Chuhao.

Paul G. Allen School of Computer Science & Engineering, University of Washington, Seattle, WA, USA Jul 2024 – Dec 2024

Undergraduate researcher (student intern), advised by **Prof. Bariş Kaşikçi**. *Topics: cloud computing*

- Built a disaggregated system to improve resource utilization while keeping the durability guarantee of persistent memory. A few key challenges were fixed in this project to improve the performance. This system outperforms NFS by up to 85× on read-heavy workloads.
  - **Role in the project:** investigated the end-to-end procedure; made quite a few changes to the original system design; conducted experiments; wrote the paper with other authors.
- Optimized the performance of Retrieval-Augmented Generation from a system perspective. The latency of the system is optimized by up to 1.72×.
  - **Role in the project:** introduced a couple of improvements from the original project design; conducted core experiments; solved performance issue; wrote the paper with other authors.

Teaching Experience

Programming Aug 2022 – Jan 2023

Data Structure Feb 2023 – Jun 2023

Principle and Practice of Computer Algorithms (project-based course) Jun 2023 – Jul 2023

Compiler Design and Implementation (project-based course) Aug 2023 – Jan 2024

Operating System Feb 2024 – Jun 2024

Operating System Feb 2025 – Jun 2025

Roll: teaching assistant. Work includes giving lectures, writing guidebooks or guiding documents, creating exam questions, etc.

Selected Honors and Awards

2024 Ruiyuan-Hongshan Talent development Foundation Dec 2024
2023 Longfor Scholarship, top 1% Dec 2023
2021 Zhiyuan Honors Scholarship, top 2% Dec 2021
2022 Zhiyuan Honors Scholarship, top 2% Dec 2022
2023 Zhiyuan Honors Scholarship, top 2% Dec 2023
2024 Zhiyuan Honors Scholarship, top 2% Dec 2024
2025 Zhiyuan Honors Scholarship, top 2% Dec 2025

Selected Project

ACM Class Online Judgement System (ACMClassOJ/TesutoHime) Sep 2022 – Jun 2025

Website: `https://acm.sjtu.edu.cn/OnlineJudge`
Work: Wrote the development documentation for the whole project; added new features; fixed bugs; (Feb 2023 – Jun 2024) operated and maintained the online judge service (∼369K submissions since 2020).

Skills

Programming languages: C, C++, Python, Go, Java, Kotlin, Verilog and Bash.
Markup languages: HTML, Markdown and LaTeX.

Languages

English: fluent.
Chinese mandarin: native.
Shanghainese: native.