Yiyu Liu

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Education

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

Student in **ACM Honor class**, GPA: **3.96**/4.3. Rank: **5**/34.   *B.Eng. in Computer Science*

Selected courses: Computer Architecture: 99/100, Operating System: 100/100, Comprehensive Design for Computer System: 100/100, Computer Networks: 98/100.

University of Washington, Seattle, WA, USA   Jul. 2024 – Dec. 2024

Student Intern at Paul G. Allen School of Computer Science & Engineering. (See the research experience section for more detail.)

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 $2.2\times$ 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. Barış 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 $85\times$ 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 $1.72\times$.
    - **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

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 ($\sim$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.