

# YIYU LIU

✉ liu\_yiyu@sjtu.edu.cn · 🌐 LauYeeYu · 🔗 <https://lau.yeeyu.org/>

## EDUCATION

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**Shanghai Jiao Tong University (SJTU), Shanghai, China**

2021 – 2025 (Expected)

Student in **ACM Honor class**, GPA: **3.93/4.3**. Rank: **5/33**.

*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.

## PUBLICATION

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### **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

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Research interests: cloud computing, systems for machine learning, and hardware/software co-design.

**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, UW, WA, USA** Jul. 2024 – Dec. 2024

Undergraduate researcher, advised by **Prof. Barış Kaşıkçı**.

*Topics: cloud computing and systems for ML*

- 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. *In submission*.
  - **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

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**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

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<b>2024 Ruiyuan-Hongshan Talent development Foundation</b>	Dec. 2024
<b>2023 Longfor Scholarship</b> , top 1%	Dec. 2023
<b>2021 Zhiyuan Honors Scholarship</b> , top 2%	Dec. 2021
<b>2022 Zhiyuan Honors Scholarship</b> , top 2%	Dec. 2022
<b>2023 Zhiyuan Honors Scholarship</b> , top 2%	Dec. 2023
<b>2024 Zhiyuan Honors Scholarship</b> , top 2%	Dec. 2024

## SELECTED PROJECT

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**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 ( $\sim 369\text{K}$  submissions since 2020).

## SKILLS

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**Programming languages:** C, C++, Python, Go, Java, Kotlin, Verilog and Bash.

**Markup languages:** HTML, Markdown and  $\text{\LaTeX}$ .

## LANGUAGES

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English: fluent.

Chinese mandarin: native.

Shanghainese: native.