Zhuofu Chen

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Education

Tongji University Shanghai, China

B.S. in Computer Science and Technology (Elite Class) Sept. 2021 - Present

- GPA: 4.93/5.00 Ranking: 1/20

Research Interests

I have broad interests in building system infrastructures to systematically bring better *performance*, *resilience*, and *usability* to *real-world applications*. Specifically, I often contemplate how to *redesign next-generation datacenter/cloud operating systems* to bridge the gap between existing hardware and emerging needs of software, and to serve numerous applications such as AI inference/training and cloud computing.

Experience

Institute of Parallel and Distributed Systems, Shanghai Jiao Tong University

Research Intern advised by Xingda Wei and Haibo Chen Jul. 2023 - Apr. 2024

- Designed a performance-optimal GPU remoting system for AI applications.
- Derived a formulating cost model to draw the network requirement of arbitrary GPU remoting applications.
- Studied the lower bound of datacenter network for supporting transparent and efficient GPU serving.
- Investigated the principle of existing GPU virtualization and checkpoint/restore solutions.
- One paper is pending review.

Key Laboratory of Embedded System and Service Computing, Tongji University

Research Intern advised by Zhijun Ding Nov. 2022 - Oct. 2023

- Implemented a WebAssembly-based runtime with an OCI shim to bridge orchestration tools and runtime.
- Invented a dynamic-import mechanism that provides an easy-to-use, isolated but sharable resource allocation mechanism for WebAssembly modules.
- One paper is pending review.

Projects

High-performance Wasm-based serverless workflow system

- Accelerates the performance of functions by pure thread-level shared-memory communication and WebAssembly's inherent near-native execution efficiency.
- Schedules function workflow based on affinity at the upper layer.

Pintos, a x86-architecture Operating System (UCB CS162)

- Implemented basic interrupts, multiple thread schedulers.
- Implemented user process handling, multiple system calls and a fully functional file system.

Selected Awards

National 1st Prize (0.55%) in Contemporary Undergraduate Mathematical Contest in Modeling 2023
Regional 1st Prize in Contemporary Undergraduate Mathematical Contest in Modeling 2023
China National Scholarship (top 0.2%) 2022
Regional 2nd Prize in Contemporary Undergraduate Mathematical Contest in Modeling 2022
Bronze Medal of National Olympiad in Informatics (NOI) 2020
1st Prize of National Olympiad in Informatics in Provinces 2019