Rixin Liu

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RESEARCH INTERESTS

I aim to enhance the security, reliability, and performance of current systems (Network System, ML System) through software modification (eBPF, framework update) or by leveraging emerging hardware (programmable switch, DPU).

EDUCATION

South China University of Technology - Project 985 B.S. Computer Science and Technology (11/164)

Sep. 2021 – Jun. 2025

GPA: 3.85/4.00

PUBLICATIONS

Themis: Efficiently Mitigating Congestion-Induced Fairness Disparities in Long-Haul RDMA Networks

Rixin Liu, Menghao Zhang, Zihan Niu, Zili Meng, Xiaohe Hu

SOSP' 24 Poster

PROFESSIONAL EXPERIENCE

Beihang University

Jun. 2024 - Now

Research Assistant (Mentor: Menghao Zhang)

- **Investigated** several papers about providing RNIC performance isolation support in multi-tenant RDMA virtualization schemes.
- Developed solution THEMIS to efficiently deal with Congestion-Induced Fairness Disparities in Long-Haul RDMA Networks. THEMIS is a fairness maintenance patch with minimum modifications to existing DCs, via preemptive notification points and reaction points at external switch which connected datacenter and WAN.

MIT-6.828 Graduate Operating System Coursework

Jan. 2024 – Mar. 2024

- **Built** a microkernel operating system by implementing various modules such as bootloader, memory management, interrupt handling, inter-process communication, user-mode file system, etc.
- Realized that ensuring malicious users do not disrupt the regular usage of innocent users and developing a management framework that is easy to upgrade and manage is crucial in a multi-tenant scenario.

AWARDS& HONOR

Huawei Scholarship (1/91)

Awarding Institution: Huawei Technologies Co., Ltd.

Date: Dec. 2023

Excellence Award

National Compiler System Design Contest Date: Aug. 2023

Second-Class Scholarship (7/87)

Awarding Institution: South China University of Technology Date: Dec. 2022

National Second Prize

National Mathematical Modeling Contest Date: May. 2022