

# Feiran (Alex) Qin

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## Education

<b>North Carolina State University</b> Ph.D. in Computer Science • Advisor: <a href="#">Prof. Xiaohui (Helen) Gu</a>	2023/08 - 2028/05 (Expected) Raleigh, NC, USA
<b>University of Illinois Urbana-Champaign</b> Exchange Student, Visiting Researcher • Advisor: <a href="#">Prof. Tianyin Xu</a>	2022/08 - 2023/01 Champaign, IL, USA
<b>ShanghaiTech University</b> B.S. in Computer Science and Technology • Relevant Courses: Operating Systems, Advanced Distributed System, Computer Architecture III	2019/09 - 2023/06 Shanghai, China

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## Research Experience

<b>NCSU Dance Lab</b> Research Assistant, Advisor: Prof. Xiaohui (Helen) Gu • <b>Distributed System Reliability &amp; System for LLM</b> : - Developing methods to automatically identify and resolve reliability issues in Generative-AI-distributed systems.	2023/08 - Present Raleigh, NC, USA
<b>UIUC Xlab</b> Research Assistant, Advisor: Prof. Tianyin Xu • <b>Multiplex resources for Serverless <a href="#">mxfaas</a></b> : <ul style="list-style-type: none"><li>Implemented and evaluated MXFaaS on KNative, a platform that enables efficient use of processor cycles, I/O bandwidth, and memory state.</li><li>Achievements include a <b>5.2 ×</b> speed-up in execution, <b>7.4 ×</b> reduction in P99 tail latency, <b>4.8 ×</b> improvement in throughput, and <b>3.4 ×</b> decrease in memory usage compared to standard serverless platforms.</li><li>Organized and documented code on GitHub, successfully achieving all three ACM badges for <b>ISCA' 23</b> artifact evaluation.</li></ul>	2022/08 - 2023/03 Champaign, IL, USA
<b>ShanghaiTech HPC Club</b> Core Team Member, Advisor: Prof. Shu Yin • <b>DevOps</b> : Managed and maintained two high-performance computers. Responsibilities included system administration, hardware maintenance, hardware innovation, package management, and resource monitoring. • <b>ISC 22 Student Cluster Competition</b> : Led the ICON project, focusing on an MPI-bounded climate and weather system program. Conducted profiling-guided optimizations on Intel, AMD, and NVIDIA devices within Niagara and Bridges-2 Clusters, resulting in a 30% performance improvement over the baseline. Achievements include significantly reduced MPI wait times, improved CPU affinity, and securing 4th place among international competitors. • <b>AI for Systems Research</b> : Designed an AI-Scheduler using DQN algorithms to optimize HPC cluster job response times, leveraging program CUDA kernel profiling and historical traffic data. Achieved a 10% improvement in response times in the <a href="#">early version</a> .	2020/10 - 2023/06 Shanghai, China

<b>ShanghaiTech Zlab</b> Student Research Intern, Advisor: Prof. Zhice Yang • <b>2D Gesture Tracking Development</b> : - Researched on a 2D gesture tracking system using commercial BLE 5.3 devices for remote video meeting users during the pandemic. • <b>Image Encryption for Enhanced Privacy Control</b> : Developed and integrated image encryption algorithms using OpenCV, based on Paper 1 and Paper 2, into AOSP. Enhanced the Camera2 API and interfaced with Android video streams, leveraging these algorithms for fine-grained privacy control.	2022/02 - 2022/06 Shanghai, China
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## Teaching Experience

<b>North Carolina State University</b> Teaching Assistant • <b>CSC 236</b> : Computer Organization and Assembly Language for Computer Scientists with <a href="#">Prof. Caio Batista de Melo</a> .	2023/08 - Now Raleigh, NC, USA
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### Professional Activities

- **OSDI/ATC 2023:** Artifact Evaluation Committee
- **SOSP 2023:** Artifact Evaluation Committee
- **EuroSys 2023:** Shadow Program Committee

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### Programming Skills

- **Programming Languages:** C/C++, Assemmbly, Python, C#, Go, JavaScript, Java, Rust
- **System-level Development Stacks:** Linux Development, QEMU, GDB, Make, Linker, Soot, LLVM
- **Frontend Web Development Stacks:** React, Vue
- **Backend Development Stacks:** PostgreSQL, Redis
- **DevOps Stacks:** Caddy, Ceph, Docker, GitLab, Grafana, Kubernetes, Cloud-init
- **High Performance Computing Stacks:** MPI, Spack

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### Contests and Awards

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| • <b>2nd</b> , Intel Innovation Hackathon, Beijing, China                      | 2020/12 |
| • <b>4th</b> , ISC 2022 Student Cluster Competition, Hamburg Germany (Virtual) | 2022/06 |
| • <b>8th</b> , ISC 2024 Student Cluster Competition, Hamburg Germany (Virtual) | 2022/06 |
| ▸ As the first participation of the NC State University Team                   |         |

Last Updated on September 18, 2024