YUQI XUE

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`xzman.github.io/yuqixue`

RESEARCH INTERESTS

Computer Systems and Architecture. AI Infrastructure. System and Architectural Techniques for Low-Cost AI.

EDUCATION

University of Illinois Urbana-Champaign *Aug 2021 – Present*
Ph.D. in Electrical and Computer Engineering
Advised by Prof. Jian Huang

University of Illinois Urbana-Champaign *Aug 2017 – May 2021*
Bachelor of Science in Computer Engineering with High Honors
Bachelor of Science in Mathematics with Highest Distinction

PUBLICATION

Architecting An Efficient Memory-Semantic CXL-based SSD with OS and Hardware Co-design. Haoyang Zhang*, Yuqi Xue*, Yirui Eric Zhou, Shaobo Li, and Jian Huang. To appear in *Proceedings of the 31th IEEE International Symposium on High-Performance Computer Architecture (HPCA'25)*. 2025.
*Co-primary authors.

Hardware-Assisted Virtualization of Neural Processing Units for Cloud Platforms. Yuqi Xue, Yiqi Liu, Lifeng Nai, and Jian Huang. In *Proceedings of the 57th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO'24)*. 2024. Received Best Paper Runner-Up Award (top 3 out of 497 submissions). Selected as IEEE Micro Top Picks.

Scaling Deep Learning Computation over the Inter-Core Connected Intelligence Processor. Yiqi Liu, Yuqi Xue, Yu Cheng, Lingxiao Ma, Ziming Miao, Jilong Xue, and Jian Huang. In *Proceedings of the ACM SIGOPS 30th Symposium on Operating Systems Principles (SOSP'24)*. 2024.

V10: Hardware-Assisted NPU Multi-tenancy for Improved Resource Utilization and Fairness. Yuqi Xue, Yiqi Liu, Lifeng Nai, and Jian Huang. In *Proceedings of the 50th International Symposium on Computer Architecture (ISCA'23)*. 2023.

System Virtualization for Neural Processing Units. Yuqi Xue, Yiqi Liu, and Jian Huang. In *Proceedings of the 19th Workshop on Hot Topics in Operating Systems (HotOS'23)*. 2023.

G10: Enabling An Efficient Unified GPU Memory and Storage Architecture with Smart Tensor Migrations. Haoyang Zhang*, Yirui Eric Zhou*, Yuqi Xue, Yiqi Liu, and Jian Huang. In *Proceedings of the 56th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO'23)*. 2023.
*Co-primary authors.

RackBlox: A Software-Defined Rack-Scale Storage System with Network-Storage Co-Design. Benjamin Reidys, Yuqi Xue, Daixuan Li, Bharat Sukhwanim, Wen-mei Hwu, Deming Chen, Sameh Asaad, and Jian Huang. In *29th ACM Symposium on Operating Systems Principles (SOSP'23)*. 2023.

IceClave: A Trusted Execution Environment for In-Storage Computing. Luyi Kang*, Yuqi Xue*, Weiwei Jia*, Xiaohao Wang, Jongryool Kim, Changhwan Youn, Myeong Joon Kang, Hyung Jin Lim, Bruce Jacob, and Jian Huang. In *Proceedings of the 54th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO'21)*. 2021.
*Co-primary authors.

WORK EXPERIENCE

Systems Platform Research Group, UIUC *May 2021 - Present*
Graduate Research Assistant *Urbana, IL*

Google LLC *Fall 2023*
Student Researcher *Remote*

Google LLC *Summer 2023*
Research Intern *Sunnyvale, CA*

TEACHING

ECE 511: Computer Architecture, UIUC, *Graduate TA* *Spring 2024, Fall 2022*
- List of Teachers Ranked as Excellent By Their Students (Fall 2022)

ECE 522: Emerging Memory and Storage Systems, UIUC, *Graduate TA* *Spring 2023*

ECE 411: Computer Organization and Design, UIUC, *Graduate TA* *Fall 2023, Spring 2022*

ECE 310: Digital Signal Processing, UIUC, *Undergraduate Grader* *Jan 2020 - Jul 2020*

SERVICE

Artifact Evaluation Committee
· IEEE/ACM International Symposium on Microarchitecture (MICRO), 2022
· USENIX Symposium on Operating Systems Design and Implementation (OSDI), 2022, 2023
· USENIX Annual Technical Conference (ATC), 2022, 2023
· IEEE International Symposium on High-Performance Computer Architecture (HPCA), 2023

Peer Review
· IEEE Computer Architecture Letters, 2022, 2023, 2024
· ACM Transactions on Architecture and Code Optimization, 2024, 2025

Organizing Committee
· Workshop on Hot Topics in System Infrastructure (HotInfra), Web Chair, 2023, 2024

AWARD

- IEEE Micro Top Picks from 2024 Computer Architecture Conferences
- Best Paper Runner-Up, MICRO 2024
- Dan Vivoli Endowed Fellowship, 2024
- Qualcomm Graduate Award, Spring 2025
- Student Travel Grants, ISCA 2023, MICRO 2024
- Oral Presentation Award, CSL Student Conference, 2024