Xuhao Luo

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Education

University of Illinois Urbana-Champaign Aug. 2021 - May. 2026 (Expected)
Ph.D. Candidate in Computer Science
University of California San Diego Sep. 2019 - Mar. 2021
M.S. in Computer Science, *GPA: 3.82/4.00*
University of Science and Technology of China Sep. 2015 - Jun. 2019
B.S. in Applied Physics

Research Publication

- **Xuhao Luo**, Ramnatthan Alagappan, Aishwarya Ganesan, **SplitFT: Fault Tolerance for Disaggregated Datacenters via Remote Memory Logging** (***EuroSys 2024***)
- **Xuhao Luo**, Weihai Shen, Shuai Mu, Tianyin Xu, **DepFast: Orchestrating Code of Quorum Systems** (***USENIX ATC 2022***)
- Zhiyuan Guo*, Yizhou Shan*(*co-first author), **Xuhao Luo**, Yutong Huang, Yiying Zhang, **Clio: A Hardware-Software Co-Designed Disaggregated Memory System** (***ASPLOS 2022***)

Experience

Amazon Web Service May. 2022 - Aug. 2022
Applied Scientist Intern *Seattle, WA, USA*

- Improved the reliability of the volume metadata updating workflow for AWS S3 volume metadata cache service.
- Implemented and evaluated a volume metadata updating prototype using Amazon Quantum Ledger Database (QLDB).

University of Illinois Urbana-Champaign May. 2021 - Now
Research Assistant *Urbana, IL, USA*

- DepFast: Built a framework to implement and reason about fail-slow tolerant distributed systems in an easy and effective way.
- SplitFT: Built a new fault-tolerant approach for storage-centric cloud databases by replicating logs on remote nodes using RDMA.

Microsoft Research Jun. 2020 - Sep. 2020
Research Intern *Beijing, China*

- Designed and implemented task scheduling and dispatching system for distributed machine learning using **C++**.
- Designed and implemented **CUDA**-based high-performance inter-GPU communication channel for distributed ML within a large-scale GPU cluster.

University of California San Diego Sep. 2019 - Dec. 2020
Research Assistant, advised by Prof. Yiying Zhang *La Jolla, CA, USA*

- Designed and implemented a *go-back-N* based reliable network stack on both FPGA and host Linux server to support high-performance reliable network communication. Using kernel-bypass to achieve high-throughput and low-latency.
- Designed and implemented an RPC-semantic connectionless network stack to improve scalability, with a delay-based congestion control.

Agora.io Jul. 2019 - Sep. 2019
Software Engineer Intern *Shanghai, China*

- Participated in the development of CapSync, a distributed capability negotiation system for synchronizing media capability info between users, implemented with **C++** and **libevent**.

Services

- OSDI'23 Artifact Evaluation Committee May 2023
- USENIX ATC'23 Artifact Evaluation Committee May 2023

Skills

Language C/C++, Python, Go, Java, Rust, Haskell, OpenCL, Verilog
Tools/Framework RDMA, TensorFlow, Docker, Zookeeper, LLVM, Google Test