

William Xinze Zheng

✉ xinzez2@illinois.edu ⚡ williamxz.com 🎓 Google Scholar 💬 xinze-zheng

Research Interests

I am interested in building next-generation networked systems for emerging workloads and computing environments, with equal emphasis on system and networking optimization.

Education

University of Illinois Urbana-Champaign	Sep 2022 – Dec 2025
<i>BS in Computer Science & Statistics, minor in Mathematics</i>	GPA: 3.99/4.0
University of Melbourne	Mar 2021 – May 2022
<i>BS in Computer Science (Transferred to UIUC)</i>	GPA: 93.2/100

Publications

- [1] Jiawei Tyler Gu, Zhen Tang, Yiming Su, Bogdan Alexandru Stoica, Xudong Sun, **William X. Zheng**, Yue Zhang, Akond Rahman, Chen Wang, Tianyin Xu. “Who Watches the Watchers? On the Reliability of Softwareizing Cloud Application Management.” *23rd USENIX Symposium on Networked Systems Design and Implementation (NSDI '26)*, May 2026.
- [2] **William X. Zheng**, Aryan Taneja, Maleeha Masood, Anirudh Sabnis, Ramesh Sitaraman, Deepak Vasisht. “StarCDN: Moving Content Delivery Networks to Space.” *ACM Special Interest Group on Data Communication Conference (SIGCOMM '25)*, September 2025.
- [3] Anna Mazhar, Saad Sher Alam, **William X. Zheng**, Yinfang Chen, Suman Nath, Tianyin Xu. “Fidelity of Cloud Emulators: The Imitation Game of Testing Cloud-based Software.” *IEEE/ACM International Conference on Software Engineering (ICSE '25)*, April 2025.

Research Experience

Research Intern , Microsoft Research	Beijing, China
Mentor: Dr. Jing Liu	Jan 2026 – Aug 2026
<i>Joining Systems Research Group</i>	
Research Assistant , UIUC&Princeton	Champaign, IL
Mentor: Prof. Francis Y. Yan & Prof. Ravi Netravali	May 2025 – Present
<i>Real-time vision language model streaming</i>	
○ Profiled and measured proprietary and open-sourced real-time VLM.	
○ Co-optimizing real-time communication gateway and inference backends.	
<i>Multi-party video conferencing</i>	
○ Built an auto-scaling prototype for the Selective Forwarding Unit (SFU) based on Jitsi and K8s.	
○ Prototyped an XDP ingress accelerated SFU.	
○ Building open-sourced auto-scaling, cloud native, modern SFU at Pion using modern Golang Webrtc.	
Research Assistant , UIUC&Akamai	UIUC, Champaign, IL
Mentor: Prof. Deepak Vasisht & Prof. Ramesh K. Sitaraman	May 2024 – May 2025
<i>Satellite based CDN [2]</i>	
○ Proposed StarCDN, a novel LEO satellite-based CDN architecture that achieves low latency and high bandwidth usage via consistent hashing and orbit-aware relayed fetch.	
○ Independently developed and open-sourced, in collaboration with Akamai, a CDN synthetic trace generator for geographically diverse traffic with theoretically proven cache-level and object-level properties.	
Research Assistant , UIUC	Champaign, IL
Mentor: Prof. Tianyin Xu	May 2023 - Aug 2024
<i>Cloud Management System Interaction [1]</i>	
○ Analyzed and understood the challenges in K8s operator's interaction with users, cloud management platform, and managed systems.	

- Helped build a small tool to identify bugs that cause failure between the operator and the managed system.

Cloud and Emulator Discrepancies [3]

- Reasoned fundamental challenges in building reliable cloud service emulators via studying real-world cloud-based applications and fuzzing emulator APIs.
- Contributed to a testing proxy middleware that automatically detects discrepancies between cloud and emulator APIs and selectively runs application tests on cloud and emulator to achieve high-fidelity testing while minimizing the cost of testing.

Teaching and Mentorship

UIUC: CS438 Communication Networks: Course Assistant

Spring 2025

UIUC: CS340 Intro. Computer Systems: Course Assistant

Jan 2023 - May 2024

University of Melbourne: VCE Summer School: Specialist Math Coordinator

Winter 2021

Awards and Achievement

2026 CRA Outstanding Undergraduate Researcher Awards (Nomination, result pending)

Jeffrey P. Blahut Memorial Scholarship (4k USD)

Airwallex Outstanding Undergraduate Student (30k AUD to Top 5 of CS Department)

University of Melbourne Leader in Community Award

University of Melbourne International Student Scholarship (10k AUD)

Presentations

1. “StarCDN: Moving Content Delivery Networks to Space”

SIGCOMM 2025, Coimbra, Sep. 11, 2025