

# William Xinze Zheng

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## 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

<b>University of Illinois Urbana-Champaign</b>	Sep 2022 – Dec 2025
<i>BS in Computer Science &amp; Statistics, minor in Mathematics</i>	GPA: 3.99/4.0
<b>University of Melbourne</b>	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 Softwarizing 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

<b>Research Intern</b> , Microsoft Research	Beijing, China
<b>Mentor:</b> Dr. Jing Liu	Jan 2026 – Aug 2026
<i>Joining Systems Research Group</i>	
<b>Research Assistant</b> , UIUC&Princeton	Champaign, IL
<b>Mentor:</b> Prof. Francis Y. Yan & Prof. Ravi Netravali	May 2025 – Present
<i>Real-time vision language model streaming</i>	
<ul style="list-style-type: none"> <li>◦ Profiled and measured proprietary and open-sourced real-time VLM.</li> <li>◦ Co-optimizing real-time communication gateway and inference backends.</li> </ul>	
<i>Multi-party video conferencing</i>	
<ul style="list-style-type: none"> <li>◦ Built an auto-scaling prototype for the Selective Forwarding Unit (SFU) based on Jitsi and K8s.</li> <li>◦ Prototyped an XDP ingress accelerated SFU.</li> <li>◦ Building open-sourced auto-scaling, cloud native, modern SFU at Pion using modern Golang Webrtc.</li> </ul>	
<b>Research Assistant</b> , UIUC&Akamai	UIUC, Champaign, IL
<b>Mentor:</b> Prof. Deepak Vasisht & Prof. Ramesh K. Sitaraman	May 2024 – May 2025
<i>Satellite based CDN [2]</i>	
<ul style="list-style-type: none"> <li>◦ 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.</li> <li>◦ 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.</li> </ul>	
<b>Research Assistant</b> , UIUC	Champaign, IL
<b>Mentor:</b> Prof. Tianyin Xu	May 2023 - Aug 2024
<i>Cloud Management System Interaction [1]</i>	
<ul style="list-style-type: none"> <li>◦ Analyzed and understood the challenges in K8s operator’s interaction with users, cloud management platform, and managed systems.</li> </ul>	

- 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

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**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

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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

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1. “StarCDN: Moving Content Delivery Networks to Space”  
*SIGCOMM 2025*, Coimbra, Sep. 11, 2025