William Xinze Zheng

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Education

University of Illinois Urbana-Champaign — Sep 2022 – Dec 2025
BS in Computer Science & Statistics minor in Mathematics — GPA: 4.0/4.0
University of Melbourne — Mar 2021 – May 2022
BS in Electrical Engineering & Computer Science — GPA: 93.2/100

Publications

StarCDN: Moving Content Delivery Networks to Space — Under review Sigcomm
William X. Zheng, Aryan Taneja, Maleeha Masood, Anirudh Sabnis, Ramesh Sitaraman, Deepak Vasisht
Fidelity of Cloud Emulators: The Imitation Game of Testing Cloud-based Software — ICSE 2025
Anna Mazhar, Saad Sher Alam, **William X. Zheng**, Yinfang Chen, Suman Nath, Tianyin Xu

Research Experience

Research Assistant — Champaign, IL
Mentor: Prof. Deepak Vasisht — May 2024 – Present
Satellite based CDN

- Empirically and statistically studied the drawback of LEO satellite-based content delivery
- Designed and evaluated a satellite-based CDN system that can reduce current space networks' uplink usage by up to 80% and latency by 50% as compared to current space networks
- Built a theoretically provable high-fidelity CDN traffic generator for geographically diversed traces that achieves $< 1\%$ difference in hit rate curve and requests distribution with real traces

Research Assistant — Champaign, IL
Mentor: Prof. Tianyin Xu — May 2023 - Aug 2024
Cloud Management System Interaction

- Studied and understood the challenges in K8s operator's interaction with users, cloud management platform, and managed systems
- Based on studied failure patterns, enhanced existing testing tools that found 70+ new bugs

Cloud and Emulator Discrepancies

- Reasoned fundamental challenges in building reliable cloud service emulators via studying real-world cloud-based applications and fuzzing emulator APIs
- Built 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

Employment

Research Assistant — Champaign, IL
Advisor: Prof. Deepak Vasisht — May 2024 – Present

Course Assistant — Champaign, IL
CS340-Introduction to Computer System — Jan 2023 - May 2024

- Held tutorial sessions to help students better understand course content, including C programming, OS, networks, Python programming, and Web backend programming
- Built GitHub action based auto-grading framework that enables instructors to set up language-agnostic auto-grading workload using Yaml
- The auto-grading infrastructure was showcased in UIUC Undergraduate Research Symposium and is used in multiple UIUC classes

Awards and Achievement

University of Illinois Urbana-Champaign Dean's List	2022, 2023, 2024
Airwallex Outstanding Undergraduate Student (Awarded to Top 5 of CS Department)	2022
University of Melbourne Leader in Community Award	2022
University of Melbourne Dean's List	2021, 2022
University of Melbourne International Student Scholarship	2021
Australia Victoria Academic Award (Awarded to Top 2 International Students)	2021

Leadership Experience

VCE Summer School Mathematics Coordinator 2022

- Designed and coordinated summer school math classes for disadvantaged students in rural areas of Australia
- Built the first free Australia national exam searching database in collaboration with Balwyn High School and non-profit tutoring organizations

Head programmer at the University of Melbourne VEX team 2022

- Led development of autonomous stage program for VEX robotic competition
- Won Australia National Champion and Excellence Award in Season 2022

Technical Skills

Languages: Python, Java, C/C++, SQL, Go
Tools: Git, Vim, Docker, K8s, Django, Flask, React, SQLite, MySQL, MongoDB, Vue, Azure, AWS, LaTeX, Unix, Raspberry Pi, OpenCV, Jupyter
Selected Courses: Advanced OS, Communication Networks, Topics in IoT, Algorithm, System Programming, Computer Architecture, Database, Applied ML, DL for Computer Vision, Statistical Modelling