

Tianyun Zhang

☎ +1 (408) 797-7077 · ✉ tianyun@cmu.edu · 🌐 tianyun-zhang.github.io · 🔗 linkedin.com/in/tianyun-zhang

EDUCATION

Carnegie Mellon University Aug 2023 - Expected 2028
Ph.D. Electrical and Computer Engineering

University of Illinois at Urbana-Champaign Aug 2020 - May 2023
B.S. Computer Science + Economics, minors in Applied Statistics, Mathematics GPA: 3.95/4.00

Relevant Coursework: Computer Architecture, Computer System Organization, System Programming, Numerical Optimization, Data Structures, Software Design, Artificial Intelligence, Machine Learning for Signal Processing

PUBLICATIONS

T. Zhang, E. Tang, F. Siddique, K. Skadron, F. Franchetti, “Towards an End-to-End Processing-in-DRAM Acceleration of Spectral Library Search”, IEEE High Performance Extreme Computing Conference (HPEC), 2024, Extended abstract with poster presentation

RESEARCH INTERESTS

Investigations into hardware-software co-design for novel computer architectures and making data-centric hardware systems more accessible to programmers.

RESEARCH EXPERIENCE

Carnegie Mellon University Aug 2023 - Present
Advisor: Prof. Franz Franchetti
Graduate Research Assistant

- Exploring efficient filtering and computation with low-precision representations for in-memory computing, focusing on applications in bioinformatics (mass spectrometry) and numerical algorithms (gradient descent)

ARCANA Research Group at University of Illinois Jan 2022 - May 2023
Advisor: Prof. Saugata Ghose
Undergraduate Researcher

- Researched programming models for processing-in-memory (PIM) applications, i.e. MapReduce algorithm on ReRAM

Gies College of Business at University of Illinois June 2021 - May 2022
Advisor: Prof. June-Young Kim
Research Assistant

- Automated financial transcript data collection and cleaning in Python, and analyzed sentiment to assess its impact on company performance

PROFESSIONAL EXPERIENCE

KQ Capital June 2023 - Aug 2023
Venture Capital Intern

- Performed market research and analysis to assess potential investments within the computer hardware industry
- Evaluated startup pitches, providing specialized insights into their technical innovations and market potential

Amazon May 2022 - Aug 2022
Software Development Engineer Intern

- Processed data and built interface of seller product applications for internal customers
- Accomplished technical stack migration to centralize rendering logic and decrease build time from minutes to seconds

BP June 2021 - Dec 2021
Digital Security AI Developer Intern

- Designed and developed a virtual assistant to monitor remote access for automation systems, enhancing service efficiency through usage insights
- Worked with Process Control Network (PCN) architecture using Azure DevOps CI/CD pipeline

LEADERSHIP AND TEACHING

Engineering Community Outreach Jan 2024 - May 2024
Instructor

- Fostered connections between Carnegie Mellon and the Pittsburgh community by delivering STEM curriculum to K-12 students, e.g. introduction to microcontrollers
- Applied pedagogy and classroom management practices to create an engaging learning environment for students from mixed socioeconomic backgrounds and experiences with math, science, and coding

Women in CyberSecurity (WiCyS) at Illinois

Sept 2020 - May 2023

President

Jul 2022 - May 2023

- Coordinated activities of the leadership team, university faculty and admin, and national WiCyS members to accomplish organization-wide initiatives

Vice President

Aug 2021 - Jul 2022

- Established communication with 10+ companies and obtained WiCyS's first sponsorship funding from industry
- Organized technical workshop collaborations with corporate sponsors (e.g. reverse engineering and security trends) drawing over 60 members in attendance

Technical Chair

Sept 2020 - Aug 2021

- Planned and presented bi-monthly technical workshops for members, e.g. workshops introducing command line security challenges, cryptography, steganography
- Managed team creating top-down 2D game with JavaScript to teach K-12 students security

CS 433 Computer System Organization Staff

Jan 2023 - May 2023

Course Grader

- Aided development of homework and exam questions testing conceptual understanding of computer architecture
- Designed grading rubrics and prepared personalized feedback on assignments

CS 196 Freshman Honors Staff

Jan 2021 - Dec 2021

Project Manager

- Led 3 teams of 5 students on stock trend analysis, scheduling, and music preference web apps
- Created coding tutorials and weekly workstreams for team under scrum-based agile framework

CS 125 Introduction to Computer Science Staff

Jan 2021 - May 2021

Course Assistant

- Mentored students with daily Java coding homework and machine projects during office hours
- Narrated discussion-style lesson content walk-throughs

Illinois Business Consulting

Sept 2020 - May 2021

Consultant

- Advised insurance agency with a team of 9, improving risk aggregation and data models
- Identified advantageous statistical and machine learning models to guide future risk analysis, delivering insights through weekly PowerPoint presentations
- Created innovative Blender animations to symbolically visualize risk

PROJECTS

Aural Trainer

April 2021

- Interactive ear trainer in C++ with a randomly generated sequence of melodic/harmonic intervals aimed to help students practice for music performance aural exams

SKILLS

Programming Languages: C, C++, Python, R, Java, Bash, C#, Kotlin, TypeScript

Graphics and Audio: Premiere Pro, After Effects, DaVinci Resolve, Audition, Audacity, Blender

Languages: English (Native), Chinese (Native), French (Intermediate), German (Beginner)

HONORS

Carnegie Institute of Technology Dean's Fellow (CMU)

2023

Procter & Gamble Excellence in Leadership Award

2023

Women in CyberSecurity Conference Scholarship

2021, 2022

JP Morgan Chase Women in Computer Science Scholarship

2021

Gold Medalist, The National French Contest

2020

Violin Distinction, Associated Board of the Royal Schools of Music

2018

AFFILIATED ORGANIZATIONS

Associate Concertmaster, CMU All University Orchestra (AUO)

Member (Former Student Chapter President), Women in CyberSecurity (WiCyS)

Member, Association for Computing Machinery (ACM) SIGARCH

Member, Society of Women Engineers (SWE)

Member, The Econometric Society

Member, Phi Beta Kappa Society