

# Tianyun Zhang

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EDUCATION	<b>Carnegie Mellon University</b> Aug 2023 - Present <i>Ph.D. Electrical and Computer Engineering</i>
	<b>University of Illinois at Urbana-Champaign</b> Aug 2020 - May 2023 <i>B.S. Computer Science + Economics, minors in Applied Statistics, Mathematics</i> GPA: 3.95/4.00
	<b>Relevant Coursework:</b> Advanced Topics in Computer Architecture, Computer System Organization, System Programming, Algorithms & Models of Computation, Data Structures, Software Design Studio, Artificial Intelligence, Econometrics of Policy Evaluation
RESEARCH INTERESTS	<b>Investigations into designing programming applications for novel computer architectures and making data-centric hardware architectures more accessible to software engineers.</b>
RESEARCH EXPERIENCE	<b>Carnegie Mellon University</b> Aug 2023 - Present Advisor: Prof. Franz Franchetti <i>Graduate Research Assistant</i> <ul style="list-style-type: none"><li>• Researching computer architecture and systems</li></ul>
	<b>ARCANA Research Group at University of Illinois</b> Jan 2022 - May 2023 Advisor: Prof. Saugata Ghose <i>Undergraduate Researcher</i> <ul style="list-style-type: none"><li>• Researching programming models for applications of processing-in-memory (PIM)</li><li>• Exploring applications of the MapReduce algorithm on processing-using-memory architectures—specifically, PageRank, word count, etc. on RACER, a bit-pipelined ReRAM chip</li></ul>
	<b>Gies College of Business at University of Illinois</b> June 2021 - May 2022 Advisor: Prof. June-Young Kim <i>Research Assistant</i> <ul style="list-style-type: none"><li>• Automated collection and cleaning of financial transcript data using Python</li><li>• Analyzed text to interpret impact of transcript sentiment on company performance</li></ul>
PROFESSIONAL EXPERIENCE	<b>KQ Capital</b> June 2023 - Aug 2023 <i>Venture Capital Intern</i> <ul style="list-style-type: none"><li>• Performed market research and analysis to assess potential investments within the computer hardware industry</li><li>• Screened and evaluated startup pitches, providing specialized insights into their technical innovations and market potential</li></ul>
	<b>Amazon</b> May 2022 - Aug 2022 <i>Software Development Engineer Intern</i> <ul style="list-style-type: none"><li>• Processed data and built interface of seller product applications for internal customers</li><li>• Accomplished technical stack migration to centralize rendering logic and decrease build time from minutes to seconds</li></ul>
	<b>BP</b> June 2021 - Dec 2021 <i>Digital Security AI Developer Intern</i> <ul style="list-style-type: none"><li>• Designed and developed remote access virtual assistant to monitor remote access usage to automation systems and identify ways to improve the service</li><li>• Worked with Process Control Network (PCN) architecture using Azure DevOps CI/CD pipeline</li></ul>
LEADERSHIP AND TEACHING	<b>Women in CyberSecurity (WiCyS) at Illinois</b> Sept 2020 - Present <i>President</i> Jul 2022 - Present <ul style="list-style-type: none"><li>• Coordinating activities of the leadership team, university faculty and admin, and national WiCyS members to accomplish organization-wide initiatives</li></ul>
	<b>Vice President</b> Aug 2021 - Jul 2022 <ul style="list-style-type: none"><li>• Established communication with 10+ companies and obtained WiCyS's first sponsorship funding from industry</li><li>• Organized technical workshop collaborations with corporate sponsors (e.g. reverse engineering and security trends) drawing over 60 members in attendance</li></ul>

LEADERSHIP AND TEACHING CTD.	<b>Technical Chair</b> <span style="float: right;"><i>Sept 2020 - Aug 2021</i></span> <ul style="list-style-type: none"> <li>Planned and presented bi-monthly technical workshops for members, e.g. workshops introducing command line security challenges, cryptography, steganography</li> <li>Managed team creating top-down 2D game with JavaScript to teach K-12 students security</li> </ul>
	<b>CS 433 Computer System Organization Staff</b> <span style="float: right;"><b>Jan 2023 - Present</b></span> <i>Course Grader</i> <ul style="list-style-type: none"> <li>Aided development of homework and exam questions testing conceptual understanding of computer architecture</li> <li>Designed grading rubrics and prepared personalized feedback on assignments</li> </ul>
	<b>CS 196 Freshman Honors Staff</b> <span style="float: right;"><b>Jan 2021 - Dec 2021</b></span> <i>Project Manager</i> <ul style="list-style-type: none"> <li>Led 3 teams of 5 students on stock trend analysis, scheduling, and music preference web apps</li> <li>Created coding tutorials and weekly workstreams for team under scrum-based agile framework</li> </ul>
	<b>CS 125 Introduction to Computer Science Staff</b> <span style="float: right;"><b>Jan 2021 - May 2021</b></span> <i>Course Assistant</i> <ul style="list-style-type: none"> <li>Mentored students with daily Java coding homework and machine projects during office hours</li> <li>Narrated discussion-style lesson content walk-throughs</li> </ul>
	<b>Illinois Business Consulting</b> <span style="float: right;"><b>Sept 2020 - May 2021</b></span> <i>Consultant</i> <ul style="list-style-type: none"> <li>Collaborated with team of 9 consultants to advise insurance agency about improving risk aggregation assessment and modeling data representation</li> <li>Researched and identified advantageous statistical and machine learning models to provide client with new direction in future risk analysis</li> <li>Created innovative Blender animations to symbolically visualize risk</li> <li>Developed weekly PowerPoint presentations to communicate cohesive information to client</li> </ul>
PROJECTS	<b>Memory Specialization for Extended Reality</b> <span style="float: right;"><b>May 2023</b></span> <ul style="list-style-type: none"> <li>Analyzed memory access patterns of the main computations in extended reality components from the ILLIXR testbench</li> </ul>
	<b>Aural Trainer</b> <span style="float: right;"><b>April 2021</b></span> <ul style="list-style-type: none"> <li>Interactive ear trainer in C++ with a randomly generated sequence of melodic/harmonic intervals aimed to help students practice for music performance aural exams</li> </ul>
SKILLS	<b>Programming Languages:</b> C++, C, Python, Java, Bash, C#, Kotlin, R, TypeScript <b>Graphics and Audio:</b> Premiere Pro, After Effects, DaVinci Resolve, Audition, Audacity, Blender <b>Languages:</b> English (Native), Chinese (Native), French (Intermediate), German (Beginner)
HONORS	<b>Carnegie Institute of Technology Dean's Fellow (CMU) (2023)</b> <b>Procter &amp; Gamble Excellence in Leadership Award (2023)</b> <b>Women in CyberSecurity Conference Scholarship (2021, 2022)</b> <b>JP Morgan Chase Women in Computer Science Scholarship (2021)</b> <b>Gold Medalist, The National French Contest (2020)</b> <b>Violin Distinction, Associated Board of the Royal Schools of Music (2018)</b>
AFFILIATED ORGANIZATIONS	<b>Member (Former Student Chapter President), Women in CyberSecurity (WiCyS)</b> <b>Member, Association for Computing Machinery (ACM) SIGARCH</b> <b>Member, Society of Women Engineers (SWE)</b> <b>Member, The Econometric Society</b> <b>Member, Phi Beta Kappa Society</b>