

Alan Zheng

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EDUCATION

Georgia Institute of Technology
Bachelors of Science in Computer Science

Atlanta, GA
December 2025

EXPERIENCE

Software Engineer

February 2026 - Present

Microsoft

Redmond, WA

- Led validation of the Surface Keyboard & Touchpad (KBTP) subsystem, driving cross-functional bug triage across hardware, firmware, software, and program management to ensure production readiness
- Developed a C#/.NET manufacturing test framework implementing 120+ keyboard validation scenarios and 71 guided manual workflows for Surface factories
- Built and deployed NuGet packages through Azure DevOps, contributing unit-tested framework components for global manufacturing validation

Software Engineer Intern

May 2025 - August 2025

F5 Networks

Seattle, WA

- Engineered a **Python**-based tool to diagnose unit test failures in the BIG-IP traffic management microkernel, supporting critical infrastructure for 76% of global websites
- Automated remediation of CVEs (Common Vulnerabilities and Exposures) in open-source third-party packages across all F5 repositories to proactively address vulnerabilities
- Integrated debug insights and CVE scan tools into **CI/CD** pipeline to streamline automated testing and vulnerability patching resulting in an optimized workflow

Embedded Systems Software Intern

August 2024 - December 2024

GTRI Georgia Tech Research Institute

Atlanta, GA

- Developed an Ethernet test module ensuring compatibility across thousands of military-grade electronic components
- Engineered MDIO bit-banging firmware in **C++** on a microcontroller to handle PHY layer communication, enabling the conversion from SFI to baseKR on the openVPX backplane
- Designed and validated 29 functional and unit tests in **Python** to ensure conformance test module reliability

PROJECTS

Embedded Cybersecurity eCTF | C, wolfSSL, Docker, Jupyter Notebook

January 2024 - May 2024

- Engineered a robust security framework for medical device microcontrollers using embedded **C**, incorporating SHA-256 hashing to enhance security
- Demonstrated practical cybersecurity expertise in a high-stakes, competitive environment by designing, defending, and attacking medical chips, placing 37th nationwide

Dungeon Crawler | Android Studio, Gradle, JUnit, Java, Agile Scrum

August 2023 - December 2023

- Developed a dungeon crawler game in **Java** using Android Studio and Gradle, implementing 20 gameplay features including collision detection, power-ups, and leaderboards
- Created over 100 **JUnit** tests to ensure feature robustness and mitigate game bugs
- Employed Agile Scrum methodology to organize 5 team members' tasks, ensuring efficient project management and timely delivery of milestones

SKILLS

Programming Languages: Python, C#, Java, C/C++, JavaScript, SQL, HTML/CSS, R

Tools: .NET, Azure DevOps, Git, GitLab, VMware, Docker, MySQL, React JS, Android Studio, Gradle

Concepts: CI/CD, Data Structures & Algorithms, Object-Oriented Programming, Linear Algebra