

# Alan Chung Ma

alanchunggt <at> gmail <dot> com | <https://www.alanchungma.com/>

West Lafayette, IN 47906

## Education

---

**Purdue University** West Lafayette, IN

December 2023

Bachelor of Science in Computer Engineering with Highest Distinction

GPA: 3.99/4.0

Relevant Coursework: Applied Algorithms, Hardware Software Security, OS Engineering, Game Theory

## Work Experience

---

**Keytos** Boston, MA

January 2024 - Present

*Software Engineer*

- Implmented a **RADIUS server** from scratch that can carry the following authentication protocols: **EAP-TLS**, **EAP-TTLS** (PAP), **EAP-MS-CHAPv2**, and **PEAP** (MS-CHAPv2).
- Setup **automated testing** for all authentication protocols implmented for the RADIUS server in CI.
- Created a library that interacts with hardware authenticators from different vendors for **PIV** and **FIDO2** in order for our products to integrate with more hardware authenticators.
- Pushed for and got various Keytos products and services to run on Linux.

**Google** Sunnyvale, CA

May - August 2023

*Software Engineering Intern* **SSD Performance**

- Set up end-to-end data pipeline for collecting and uploading **performance metrics** of production SSDs at the user library level, while making sure that SSD I/O **performance is minimally impacted**.
- Refactored the internal Asynchronous IO library to conform to modern and internal **C++** standards.
- Updated the SSD testing library to collect performance metrics for **continuous integration** tests.
- Created a dashboard to display collected metrics to the team.

**Google** Sunnyvale, CA

May - August 2022

*Student Training in Engineering Program (STEP Intern)* **GKE Networking**

- Developed a **diagnostic tool** in **Go** to aid supportability efforts by automating the collection and analysis of pod and node information from live, **large-scale GKE clusters**.
- Implemented multiple methods for collecting information from a GKE cluster for the tool.
- Designed a generic **interface** that allowed **expandability of the tool** for additional probing methods.
- Created multiple **specialized probes** for specific containers and scenarios.

## Research Experience

---

**Trustworthy Software Ecosystems Lab** West Lafayette, IN

September 2021 - Present

*Undergraduate Researcher*

- Work with **Prof. Santiago Torres-Arias** and PhD students at NYU's **Secure Systems Lab** on software supply chain security projects: **in-toto**, **TUF**, **SBOMit**, **sigstore**.
- Gave a talk with Prof. Torres-Arias on in-toto at **KubeCon EU 2024**.
- Contributed to **in-toto** feature demos shown at **KubeCon NA 2022** and **Open Source Summit NA 2023**.

## Past Leadership Experience

---

**Autonomous Motorsports Purdue** West Lafayette, IN

August 2021 - December 2023

*Co President & Software Subteam Lead*

*May 2023 - December 2023*

*Software Subteam Member, Lead*

*August 2021 - May 2023*

## Skills

---

**Proficient Technologies:** Go, C, C++, C#, Rust, Python, Zig, GNU/Linux, Git, GitHub, GitHub Actions, Docker, Kubernetes, ROS/ROS2, MATLAB, JavaScript (Vue.js, Svelte, Astro), HTML/CSS, LaTeX

**Languages:** Fluent in English, Spanish, and Mandarin Chinese