

# LAP KEUNG MA, ERIC

[eric.ma@berkeley.edu](mailto:eric.ma@berkeley.edu) · [linkedin.com/in/eric-ma-ba7052212/](https://www.linkedin.com/in/eric-ma-ba7052212/) · [github.com/CalEricMa](https://github.com/CalEricMa)

## Education

### University of California, Berkeley

*B.S. in Electrical Engineering and Computer Science (EECS)*

Relevant Coursework: Computer Security, Probability and Random Processes, Optimization Models in Engineering, Efficient Algorithms, Intro to Quant Finance, Designing Informative Devices and Systems, Intro to Full-Stack Development

Berkeley, CA

Expected May 2025

## Skills

Programming Languages: C++, Python, JavaScript, Golang, SQL, C, Kotlin, Scheme, x86 Assembly

Tools: Numpy, Arduino, Ginkgo, Git/GitHub, GNU Debugger, VS Code, MS Office

Skills: Machine Learning, Computer Security, Circuits, HTML/CSS

## Experience

### Teaching Assistant and Tutor (Computer Science and Math)

Jan 2022-May 2023

Diablo Valley College

- Conducted weekly office hours and provided guidance to 100+ students in data structures, algorithms, assembly language, OOP, discrete math, and linear algebra,
- Collaborated with a team of 50+ staff members to develop comprehensive course materials for 1,000+ students, enhancing the learning experience and course engagement.

### Technology Intern

Jan 2022-May 2023

Student Government Technology Committee

- Collaborated with a team of 10 to redesign and maintain 10 web pages, implementing 14 new user-facing features using JavaScript, which boosted website traffic by 150%.

## Projects

### Voice Command Controlled Car

Jan 2024-April 2024

- Applied linear least squares regression on encoder data to determine the system's optimal operating point, maintaining wheel velocity differences within 2%, enhancing vehicle stability.
- Developed a closed-loop control system using Arduino, integrating real-time encoder and feedback data to auto-correct trajectory, effectively mitigating external disturbances.
- Created a voice command classifier utilizing SVD and PCA, achieving over 90% classification accuracy, enabling seamless voice-controlled navigation.

### Secured File Sharing System

Feb 2024-April 2024

- Designed a secure database using RSA, AES-CTR, HMAC, and digital signatures to ensure data integrity and protect against cyber-attacks, enhancing system security.
- Implemented comprehensive security measures and utilized the Ginkgo test framework to perform 100+ security tests, successfully identifying and mitigating all attempted breaches.

## Leadership & Extracurricular Activities

### Project Bracket

Sep 2022-Nov 2022

Backend Lead

- Led a backend team of 10 in developing an Android app using Kotlin and Python, integrating Google Maps API to enhance campus navigation and provide detailed information on instructors and classes, resulting in a 20% increase in user engagement.
- Organized and conducted workshops on software engineering fundamentals, improving team members' coding skills and project contributions by 25%.

### Hong Kong Student Association

Jan 2022-May 2023

President and Founder

- Founded and served as President, growing the association's membership by 100% through strategic outreach and engagement initiatives.
- Partnered with multiple campus clubs to co-host a diversity event attended by 1,000+ participants, successfully promoting Hong Kong culture and fostering multicultural awareness.