# Michael Zeng

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## Experience

Friendly Robots Company — Berkeley, CA

**Software Engineering Intern** — *June 2019 – present*

Seed-stage startup headquartered in Berkeley, CA, whose mission is to develop autonomously driven robotic vacuum cleaners targeted at enterprises.

- Implemented a path planning algorithm in Python designed to find the most optimal vacuuming path for a car-like robot given 2D map information generated from a laser (LiDAR) scanner.
- Integrated computer vision through a stereo camera in Robot Operating System (ROS) to allow the robot to detect and avoid obstacles while driving autonomously.
- Designed a basic website in HTML/Javascript allowing the user to teleoperate the robotic vacuum cleaner remotely through the Internet based on sensor and camera information.

## Education

University of California, Berkeley — Berkeley, CA

**B.A.** (Computer Science) • **GPA:** 3.775/4 *Expected graduation: Spring 2021* • *August 2017 – present*

**Major courses:**

- CS 61a: Structure and Interpretation of Computer Programs
- CS 61b: Data Structures
- CS 61c: Great Ideas in Computer Architecture (Machine Structures)
- CS 70: Discrete Mathematics and Probability Theory

## Projects

CS 61b: Data Structures

**Languages: Java** — *Fall 2018*

- **Galaxies:** Implemented a puzzle game, utilizing test-driven development.
- **Enigma:** Implemented an improved version of the Enigma machine, a German device used to encrypt messages during World War II.
- **Amazons:** Implemented a board game and an AI player, using a game tree to find the best moves.
- **Graphs:** Implemented a graphs utility package in Java, including a generalized graph traversal algorithm that can be extended to Depth-First Search, Breadth-First Search, Dijkstra's and A*.

Prêt Allez

**Languages: JavaScript** — *Summer 2018 – present*

- Implemented a web application which allows the user to construct a fencing referee's call based on the rules of right-of-way.
- In the future, users will be able to watch a fencing video, input what they would call if they were refereeing, and compare their input against what the referee in the video actually called.

## Volunteer Work

Cal Fencing Club

**Vice President** — *August 2017 – present*

- As vice president, I assist the president in communicating information to the team, liaising with Cal Sports Clubs in organizing club events, and training to become president in 2020-21.
- The Cal Fencing Club manages a budget of more than $20,000 per year.
- I am an officially rated foil referee for the United States Fencing Association.

## Skills and interests

**Programming languages:** Python 3, Java, JavaScript, C, RISC-V Assembly

**Natural languages:** English *(native)*, German *(intermediate)*, Mandarin Chinese *(basic)*.

**Interests:** Fencing (attended nationals 4x), Wikipedia (administrator), Texas hold'em poker