# Michael Zeng

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## Education

University of California, Berkeley — Berkeley, CA

**B.A.** (Computer Science) • **GPA:** 3.74/4.0 *Expected graduation: May 2021* • *August 2017 – present*

*Relevant coursework*: Data Structures, Machine Structures, Algorithms, Artificial Intelligence, Computer Security, Computer Networking

## Experience

JPMorgan Chase & Co. — Columbus, OH

**Summer Software Engineer Intern** *July 2020 – August 2020*

- Developed a website designed to improve interaction between one of the firm's non-profit clients and their prospective donors
- Utilized the Django web framework (Python 3) to create a system that allows the non-profit's staff to publish newsletters to their donor base and allow users to comment on those newsletters, subject to staff moderation
- Implemented a dynamic programming algorithm in Java designed to compute the edit distance between two strings in $O(nm)$ time

Friendly Robots Co. — Berkeley, CA

**Software Engineering Intern** *June 2019 – August 2019*

- Integrated Google Cartographer SLAM with a LiDAR laser scanner in Robot Operating System (ROS)
- Integrated computer vision through a ZED stereo camera to allow the robot to detect and avoid obstacles while driving autonomously, using ROS
- Deployed a JavaScript website on an AWS EC2 instance which allows the user to teleoperate the robotic vacuum cleaner remotely through the Internet based on sensor and camera information

## Projects

HoldemSim

**Languages: Python (Django), HTML/CSS** • https://github.com/mzeng7/holdem-sim *May 2019 – present*

A full-stack web application written using the Django web framework for the poker game of Texas hold'em that allows the user to simulate games and analyze strategy

- Designed objects to store and compare different poker hands efficiently
- Developed an algorithm that applies the rules of Texas hold'em to determine the winning hand once the action in a round is complete, given all cards available

The Matrix

**Languages: C++, x86** *February 2020*

- Identified and experimented with various memory security vulnerabilities inside of C++ programs in a virtual x86 machine, which allowed me to spawn a shell with higher permissions access than an ordinary user
- Experimented with "stack-smashing" buffer overflow attacks, including overwriting the return instruction pointer by exploiting integer overflow, off-by-one errors, as well as time-to-check to time-of-use vulnerabilities

## Volunteer Work

Cal Fencing Club

**President** *June 2020 – present*

- Led UC Berkeley's fencing club through the COVID-19 crisis, planning "virtual" practices and recruitment events, and managed a budget of $20,000 which we use for travel to competitions and equipment
- Manage the website fencing.berkeley.edu, which facilitated the annual recruitment of at least 25 new fencers through advertising, scheduling, and contact information, designed with HTML/CSS/JavaScript
- Previously secretary (June 2017 – May 2018) and vice president (June 2019 – May 2020)

Wikipedia

**Administrator** *January 2017 – present*

- Author of 12 Wikipedia articles, 4 of them have received the designation "good article" after a quality review
- Help protect Wikipedia against vandals, blocking them from editing and deleting inappropriate content
- Appointed to assist in issues affecting privacy, including the ability to suppress personal information and to compare the IP addresses and user agent strings of Wikipedia users to check for multiple accounts misuse

## Skills and Interests

**Technical Skills:** Python, Java, C, HTML/CSS, JavaScript, GoLang, SQL, Git, Django web framework

**Natural Languages:** English *(native)*, German *(proficient)*, Mandarin Chinese *(conversational)*.