

# Margo Oka

## EDUCATION

2019 **Mathematics BA / Minor in Computer Science**  
UC Berkeley, Berkeley CA

## WORK EXPERIENCE

AUG 2017 – DEC 2017

Raíces Recruitment and Retention Center

### **Tutor**

Ran drop-in tutoring sections for CS61A with Raíces. The goal was to provide a welcoming environment for Latinx students in STEM.

## EXTRA CURRICULAR ACTIVITIES

JUN 2017 - PRESENT

### **Pioneers in Engineering (PiE)**

Electrical Team. Use Eagle software to design and produce PCBs. Nonprofit organization puts on yearly robotics competitions for underserved high school students in the local area.

JAN 2017 - PRESENT

### **FEMTech Launch**

Tutor. Run small weekly 2-hour tutoring sections for CS61A students. Prepare lectures and worksheets. Facilitate teamwork and sense of community. Create a welcoming inclusive environment for women in computer science.

AUG 2017 - PRESENT

### **Mathematics Undergraduate Student Association (MUSA)**

Officer. Create a welcoming space for math undergraduates. Organize social and professional events. Work with alumni and companies such as Jane Street.

AUG 2017 - DEC 2018

### **Computer Science Mentors (CSM)**

Associate Mentor. Run small weekly hour tutoring sections for students in CS61A and CS61B.

## VOLUNTEER WORK

JAN 2019- PRESENT

UC Berkeley Food Pantry

### **Volunteer**

Help students with food insecurity. Help keep the pantry clean and well-stocked.

JUN 2010- JUN 2014

Ygnacio Valley Public Library

### **Library Aide**

Shelved and cleaned books. Set up crafts and activities for young library patrons. Helped keep the library orderly and inviting.



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## NOTABLE PROJECTS

2017

### **Rudimentary SQL Interpreter/Database**

Implemented support for: Create table, Load, Drop, Store, Insert into, Print, Select, arithmetic operators, and table joins. (Java)

2018

### **Basic Shell/Terminal**

Support for cd and pwd, implementation of program execution, path resolution, input/output redirection (> and <) and signal handling. (C++)

2018

### **Process Scheduler**

Implemented multithreaded process scheduler with priority and priority donation for Pintos. Also supports round-robin process execution. Synchronization via locks, semaphores, and condition variables. (C++)

2018

### **Pac-Man**

Implementation of AI for multiple agents, alpha-beta pruning, expectimax, minimax, identifying useful evaluation functions to evaluate game states, reinforcement learning, value iteration, asynchronous value iteration, q-learning. Basic intro to Machine Learning and back propagation. (Python)

2017

### **Handwriting Extrapolation**

Given sample handwriting program can extrapolate handwriting and produce images of any text in that handwriting. (MatLab)

2018

### **Secure File Sharing Client**

Implement cryptographically secure file uploading, downloading, sharing scheme; similar to Dropbox. Used signatures, MACs, Diffie-Hellman, cryptographically secure hash functions etc. (C++)

2018

### **Voice Controlled Car**

Built voice control car on breadboard. Designed and wired circuits, soldered. Used closed-loop design to ensure car drove straight. Used PCA and SVD to reduce noise of audio input. Coded on Arduino Launchpad. (C++, Jupyter Notebook-Python)