

# Kai Mohl

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## EDUCATION & COURSEWORK

**University of California, Berkeley** | Berkeley, CA

August 2021 – May 2025

- B.S. Electrical Engineering and Computer Science
- *Regents' and Chancellor's Scholarship*
- Certificate in Entrepreneurship & Technology

*In Progress*

### Relevant Coursework:

- Data Structures, Algorithms and Efficiency, Discrete Mathematics and Probability, Machine Structures, Structure and Interpretation of Computer Programs, Designing Information Devices and Systems II, Designing Information Devices and Systems, Intro to Artificial Intelligence, Operating Systems, Computer Security, Databases, Intro to Robotics

## PROFESSIONAL EXPERIENCE

**FHL Vive Center for Enhanced Reality, UC Berkeley** | Berkeley, CA | 337 Cory Hall, CA, 94720

June 2023 – PRESENT

*Undergraduate Researcher - (20-40 hours per week) - Supervisor: Dr. Allen Yang (510) 710 1631 yang@eecs.berkeley.edu*

- Working on waypoint-following, SLAM, and autonomous navigation for a rover using ROS/ROS2, C++, and Python under the guidance of Dr. Allen Yang.
- Developed API for LLM function calling using Gorilla LLM, API Server for communication between the LLM control device and rover, and created/maintained comprehensive documentation for the project
- Designed mounting plates and attachments using CAD software to mount LiDAR, Nvidia Jetson Orin Nano, and a dedicated battery for the onboard Jetson.
- Used both simulations (Gazebo, Carla) and a physical rover to implement LiDAR, stereo camera, and IMU based localization and path planning.

**NASA SUITS - FHL Vive Center for Enhanced Reality, UC Berkeley** | Berkeley, CA | 337 Cory Hall, CA, 94720

December 2023 – June 2024

*Operations and Product Lead - (20 hours per week) - Supervisor: Dr. Allen Yang (510) 710 1631 yang@eecs.berkeley.edu*

- In charge of implementing effective project management strategies and infrastructure, ensuring high-quality deliverables, and coordinating the hardware, software, UI/UX, and media/outreach teams to promote productive collaboration.
- Responsible for the review and approval of commits to the project, managing branches and maintaining published repo integrity; compilation of final demos and deliverables.

**Indelible Learning Inc.** | Los Angeles, CA | 46 Peninsula Ctr, Ste E347 Rolling Hills Estates, CA 90274

August 2020 – June 2021

*Project Intern - (5-10 hours per week) - Supervisor: Dr. Jasminka Criley (650) 714-1815 jmcrcriley@gmail.com*

- Worked in testing and bug fixing for released and in-development programs, and gained experience in professional settings.

## PROJECTS

### Tracking Drones - C++, Python, C#, ROS2, Unity

- Developed and implemented SLAM algorithms, movement, and tracking using the Nav2 stack and ZED SDK for room scanning micro drones, fully simulated in Gazebo using ROS2 Humble on Ubuntu 22.04.
- Created sample AR display for displaying scanned data and localization using AR tags on Hololens using Unity/C#.

### Gitlet - Java

- Wrote a model version-control system that imitates features of Git, including add, commit, and merge.

### Classify - RISC-V

- Used RISC-V assembly code to classify handwritten numbers with a basic ML algorithm.

### CPU - Logisim

- Designed a functional CPU capable of running RISC-V instructions.

### Optimization - C

- Wrote a program to handle 2D convolutions and optimized it using OpenMP directives and SIMD instructions.

### Pacman AI - Python

- Used various search algorithms to create a functional AI for pacman (BFS, DFS, A\*, Minimax, Alpha-Beta Pruning)

### Secure File Sharing System - Go

- Created a secure system to store, append, and load files along with sharing management using various encryption techniques.

## VOLUNTEER EXPERIENCE

**Palos Verdes Peninsula Land Conservancy** | Rancho Palos Verdes, CA

August 2018 – August 2021

*Volunteer*

- Spent ~3-5 hours weekly managing a large plot in Rancho Palos Verdes, planted a large percentage of the original plot with one other volunteer, constructed necessary environmental protections, and organized other local volunteers.

**Palos Verdes Water Polo Club** | Rancho Palos Verdes, CA

August 2019 – August 2021

*Volunteer Splashball Coach*

- Coached new players aged 6-10, organized practices and drills with other volunteer coaches.

## SKILLS & OTHER

**Other Organizations:** Cal Club Water Polo (Captain, Formerly Treasurer)