

David Zhang

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EDUCATION

University of California, Berkeley

Aug. 2019 – May 2022

B.A. in Computer Science, B.A. in Mathematics

Berkeley, CA

Courses: Structure and Interpretation of Computer Programs, Designing Information Devices and Systems I, Great Ideas in Computer Architecture, Linear Algebra

Online Coursework

Coursera: Deep Learning Specialization

Coursera: Machine Learning

EXPERIENCE

University of California, Berkeley

Sept. 2019 – Current

Undergraduate Researcher, TAFLab

Berkeley, CA

- Implement optical flow for underwater position tracking and object detection using OpenCV image processing.
- Develop open-loop controls and interface sensors to ESP32 and AVR microcontrollers on embedded systems.
- Supervised under Professor Reza Alam and PhD student Alexandre Immas.

NASA Ames Research Center

Summer 2018

Intern, Intelligent Systems Division through SGT Inc.

Sunnyvale, CA

- Researched state estimation for fault tolerant flight control.
- Implemented the Extended Kalman Filter in C into the FlightDeckZ flight simulator, reducing 90% of noise from raw sensor readings.
- Created data visualization tools in Python to plot state estimation performance.

ACTIVITIES & LEADERSHIP

AVBotz

Aug. 2015 – Aug. 2019

VP of Software

Pleasanton, CA

- Led programming team (15 members) to build the software for an autonomous submarine to compete at the international collegiate RoboSub competition. Semifinalist at RoboSub 2019.
- Developed the overall software architecture on ROS in C++, SLAM using a Kalman Filter and Particle Filter Localization, and machine vision using OpenCV and the Tensorflow Object Detection API.
- Implemented signal processing algorithms for direction-of-arrival estimation of high-frequency underwater sound.

ACE Coding

Aug. 2017 – Apr. 2019

Volunteer Instructor

Pleasanton, CA

- Taught 30+ students programming in Scratch and Java in an after-school program at Pleasanton Middle School.

PROJECTS

Echo Music (Java)

- Created an MP3 player app with over 10,000 downloads on Google Play Store.
- Developed overall UI and controls, along with databases to store listening habits and music metadata.

AlgoBot (Python)

- Wrote bot that uses mean reversion and trend following strategies with web-scraped data to suggest trades.

ACHIEVEMENTS

USACO Platinum Qualifier: Placed in the top 150 in the high school national programming competition.

MIT Battlecode: Placed in the top 32 of the US tournament of MIT's AI competition.

SKILLS

Languages: Proficient in C, C++, Java, Python, RISC-V.

Technologies: Tensorflow, Keras, ROS, OpenCV, Arduino, ESP32, Android