Calvin Huang

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Education

- **University of Michigan** — Cincinnati, OH
  BSE Computer Science, GPA: 3.850 — *September 2018-expected May 2022*
  - Course Highlights: Machine Learning, Computer Vision, Cybersecurity, Data Structures and Algorithms, Databases, Computer Architecture, Web Systems, Linear Algebra

Professional Experience

- **Principal Financial Group** — Remote
  Full-Stack Software Intern — *June 2020-August 2020*
  - Spearheaded the transition to a new logging system, added security features to app deployment pipeline via back-end implementation and Ansible automation, and created a server check for conflicting jobs in order ensure reliable metrics on feature changes and deployments.
  - Added deployment API features by implementing cyclical redeployment functionality and reducing deployment downtime with dynamic scheduling.
  - Led intern Code Jam team in brainstorming and development of a full-stack web app hosted in AWS and mentored peers in working with web frameworks and deployment methods within the span four days.
- **Radiological Health Engineering Laboratory** — Ann Arbor, MI
  Research Assistant, Dr. Kimberlee Kearfott — *September 2019-Present*
  - Researched and trained machine learning models to correlate predictors for indoor radiation levels for use in early detection of earthquakes.
  - Designed and deployed MySQL database for weather and radiation sensor data to be displayed on a monitoring website. Wrote data processing pipeline for sanitizing and organizing sensor data before storage.
  - Developed iOS and Android apps with a heat map interface for tracking radiation data collected by student-built radiation detectors powered by Raspberry Pi's.
- **UM::Autonomy Project Team** — Ann Arbor, MI
  Deep Learning Computer Vision Engineer — *September 2020-Present*
  - Experimented with YOLOv3 deep neural net to detect buoys from boat camera footage.
  - Labeled and processed training data using video footage collected from past competitions for use in training the deep neural net.
- **MRover Project Team** — Ann Arbor, MI
  Computer Vision Engineer — *September 2018-May 2020*
  - Implemented AR tag detection algorithm using OpenCV for a find-and-identify task in the University Rover Challenge.
  - Presented professional design reviews to the team to interface with other sub-teams in order to decide design priorities for implementing obstacle detection.

Personal Projects

- **COVID-19 Heatmap**
  Web Application and API for Monitoring Projections of the Spread of COVID-19
  - Developed efficient REST API with Rust to collect and sanitize detailed geographical data at specified time intervals and to communicate current data on-demand to front-end applications.
  - Designed client-side web app using React and Google Maps to visualize global and local data of COVID-19 cases using configurable heat maps.
- **Anonymous Video Conferencing**
  Video Chat Web Application for Virtual Hangouts
  - Incorporated WebRTC video technology into modern video-client web app designed to be easily self-hosted for secure and anonymous communication amongst friends.

- Set up Node.js back-end socketing and custom peer-to-peer server for reliable and secure video calls across different devices.

- **Six-Axis Robotic Arm**
  Automated Desktop Robotic Arm
  - Constructed automated 6-axis, 3-D printed robotic arm to perform sorting tasks in a small workspace.
  - Created Windows desktop application using .NET Framework to interface with micro-controllers to store data used to automate the robotic arm.

Skills

- **Programming Languages**
  C/C++, MATLAB, Python, Swift, C, Java, Javascript/TypeScript, Rust, Julia, MySQL, MongoDB, DynamoDB
- **Technologies and Frameworks**
  React, NodeJS, Flask, AX-RS, Rocket (Rust), Genie(Julia), OpenCV, .NET, WebAssembly, AWS, Google Cloud, Jupyter

Honors

- **University of Michigan Dean's Honor Roll** *December 2018-Present*
- **Tau Beta Pi Michigan Gamma Chapter** *September 2019-Present*