Apollo Jain

apollojain@gmail.com | apollojain.com | github.com/apollojain

Technical Skills

Languages: Python, Matlab, Java, C++, Go, Rust, Javascript
Technologies: Simulink, PyTorch, CVXPy, OpenCV, ROS, Docker, ZeroMQ, Arduino
Other: Active DoD Top Secret Clearance

Professional Experience

STR February 2021 – Present
Arlington, VA *Scientist*

- Worked on a Space-based AMTI/GMTI Radar, primarily on the beam planner and command-and-control interface (MATLAB, Python, C++).
- Conducted Program Management and 6-DOF Simulation Development for DARPA Nautilus, a program that aims to build AI that can design all aspects of an unmanned underwater vehicle (UUV), including navigation, energy, and 3D model constraints verification (ROS, C++, Python).
- Developed a system to catch rogue IMSI catchers in order to prevent tracking of USG officials. Delivered and deployed four units domestically. Awarded the **STR Spotlight Award** for my technical contributions. Technologies used include Flask, SQLite, Javascript, HTML, CSS, and FastAPI.
- Worked on an RL Simulation Environment for a Maritime System of Systems (Python3, Open AI Gym, Ray)
- Worked on a number of other programs related to geospatial pattern-of-life (Java, Javascript, HTML, CSS, PostgreSQL, PostGIS, ArcGIS), and rogue sensor detection, but they are classified

Anduril Industries *November 2018 – October 2020*
Irvine, CA *Software Engineer*

- Built out radar integrations, tracking models, and software infrastructure for the company's drone tracking tower. Integrated various third-party RF Detection Sensors in order to improve the algorithm's confidence. Written in C++, Golang, and NixOS. Deployed both domestically and internationally.
- Built out the company's maritime tower product, which includes radar and VHF transceiver serial processing code, general infrastructure, a boat-specific sensor fusion tracking model, a CV boat classifier, and a sigmoid-based hostile boat classifier. Currently used in the field for drug trafficking prevention on the California coast. Written in C++, Golang, and NixOS.
- Created an EKF-based general purpose model for fusing high-confidence measurements (ADSB, AIS, GPS) into the system's global tracker. Prototyped in Matlab and written in C++.

UC San Francisco *Research Engineer*
San Francisco, CA *August 2017 – November 2018*

- Created an infrastructure pipeline in order to identify features to compute visual and text based features of MRIs using Python.
- Created a SVM-based classification model to differentiate between MRI DICOM image types and refined a CNN-based model for the same purpose. Recorded accurate classification rate of >90%, while reducing false-positive rate by 30% by fusing aforementioned text-based features. Used Python in conjunction with ScikitLearn and PyTorch frameworks.

Projects

Mediate (2019)
Worked in a four person team for YCombinator Hacks in order to build a pair of glasses for recording, searching, and querying conversations. Used an Arduino Feather, Bluetooth Module, Google Cloud Speech, and MongoDB.

Brainwalk (2018)
Worked in a four person team on a neurodegenerative disease diagnostics project in conjunction with the UCSF Bove Lab and the Fung Fellowship. Created infrastructure in Python (Scikitlearn and SciPy) to connect the three portions of the project: Eye tracking data, sound-based signal processing, and gait data.

Education

UC Berkeley May 2018
M.S. EECS
Teaching: Designing Information Devices and Systems II (Circuits, Controls, and Signal Processing)
Thesis: EV Infrastructure Planning and Grid Impact Assessment: A Case for Mexico

UC Berkeley May 2017
B.S. EECS
Organizations: ASUC Student Government (CTO), Robotics at Berkeley (Co-Founder, Vice President), Hackers at Berkeley (Director), Kairos Society