AYUSH JAIN

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EDUCATION

University of Southern California — Los Angeles, CA
B.S. Applied and Computational Mathematics (Minor in Product Design) — August 2017 - May 2021

Clubs/Organizations: Lavalab (Lead Developer), Scope (Product Manager), USC SEP (VP of Ext. Affairs), BTG

WORK EXPERIENCE

Cape Analytics — Mountain View, CA
Software Engineering Intern — May 2018 - August 2019

- Implemented methods of contour simplification (Hough transforms, constraints, RANSAC) and metrics (Hausdorff, Frechet, etc.) via Python (OpenCV, Numpy) to determine an optimal method of simplifying building roof polygons. [Reduced SQL database consumption for roof geometry by 96%]
- Created automated pipeline with Python libraries (Numpy, Scikit) to extract road networks from CNN model heatmaps; Simplified resulting graph structures and pruned spurs/noise using NetworkX.
- Designed a PostgreSQL database with GIS-friendly schema, and a Python internal API for optimally querying and inserting road-network graph data. [Improved major bottle-necking process runtimes by 85%]

Falkonry — Sunnyvale, CA
Software Engineer — September 2017 - April 2018

- Developed an RNN model using Tensorflow to predict onset of seizures in epilepsy patients for optimal treatment and prescription timing. [Presented findings at Oracle Open World Conference]
- Created a continuous-integration testing pipeline for core deep learning models using Docker, Python, and Jenkins. [Identified mislabelled data and a severe model regression once deployed to production]
- Developed a dashboard for identifying critical feature sets from raw signal data; Built front-end using ReactJS and back-end with Python Tornado and SQL; Worked with QA team to identify project features and timeline.

Techlab Education — Saratoga, CA
Software Engineering Intern — May 2015 - September 2015

- Designed the Techlab website using ReactJS, SASS, and Grunt, and implemented progress saving and authentication functionality in education dashboard for Pythonroom (Acquired by Tynker).

LEADERSHIP

Dronesdash — Sunnyvale, CA
Founder & CTO — July 2016 - August 2017

- Managed development of cross-platform mobile app using React Native and Python Flask back-end to manage customers and deliveries; Hacked 3DR Solo drones and installed custom UAV software suites for prototyping.
- Spearheaded on-board computer vision tracking software for identifying and authenticating users from 150 ft. in the air using OpenCV, Ardupilot, and Keras. [Prototypes successfully delivered items within 4 ft. of target]

PROJECTS

Dexto — AngelHacks

- Invented non-invasive prosthetic tracking system using a cheap EMG sensor armband and an Arduino.
- Implemented a naive bayesian classifier in Java and developed a web UI using HTML/CSS and Javascript (Three.js) to accurately model a patient's finger gestures; Created an API for connecting prosthetic hardware.

Leeway — Lavalab Incubator

- Managed team of four to build a mobile application to help friends find times to meet and attend events.
- Engineered back-end using Python Flask & SQL and web-scraped through BeautifulSoup to find local events.

Scribe — HackingEDU

- Designed a mobile iOS application to convert pictures of textbook pages into customized quiz questions; Mocked up application layout in Sketch and implemented REST API client in Swift.
- Developed optical character recognition back-end with Tesseract-OCR and pre-trained Word2Vec NLP model.

AWARDS

1st Place @ HP Code Wars	Highest score in national competitive programming competition.
Level 5 @ Google Foobar Challenge	Passed Google's recruiting challenge at 16.
Myo and Autodesk Award @ AngelHacks	Awarded for Dexto, a non-invasive prosthetic tracking system.
Social Network Award @ MakeHacks	Awarded for Quikbux, a service for posting chores or odd-jobs.

SKILLS

Languages:	Python, C++, Java, SQL, Javascript, HTML/CSS, Vimscript
Libraries/Tools:	OpenCV, Numpy, Scikit, Pandas, Tensorflow, ReactJS, Docker, NodeJS, Git, Jenkins