

Zach Bellay



Education

SANTA CLARA UNIVERSITY

Master of Science, Computer Science and Engineering, June 2020

GPA: 3.5/4.0

Thesis: Deep Learning Methods for Efficient Image Coding

Bachelor of Science, Computer Science and Engineering, June 2019

GPA: 3.3/4.0

Skills

Languages: Python, JavaScript, TypeScript, C/C++, HTML/CSS, Bash, SQL, Node.js

Frontend: React, React Native, Bootstrap, jQuery, Bulma, Zola

Backend: Django, FastAPI, Flask, GraphQL, PostgreSQL, SQLite, Redis

Machine Learning: Pytorch, OpenCV, Scikit-learn, Numpy, MMDetection

Misc: Git, Docker, Docker Compose, GitHub Actions, DVC, AWS, Digital Ocean, Netlify

Experience

ONEPOINTONE (INDOOR VERTICAL FARMING STARTUP) | SOFTWARE ENGINEER

Jun 2020 – Aug 2022

San Jose, CA (Remote)

- Developed plant analysis service using deep learning to detect plant germination rate, leaf size, and leaf class.
- Developed custom image stitching software to stitch 780 images into one image.
- Developed GraphQL endpoints to manage and send commands to entities in the farm.
- Built RESTful CRUD backend and SQL tables for managing all imagery objects in the farm.

FORD MOTOR COMPANY | PRODUCT DEVELOPMENT INTERN

Jun 2019 - Sep 2019

Palo Alto, CA

- Prototyped air quality sensor network with custom built hardware. Built with Python, Flask, Docker, Kubernetes, Arduino.
- Compared Support Vector Machines (SVM) and Convolutional Neural Network (CNN) in traffic sign detection.

ONEPOINTONE (INDOOR VERTICAL FARMING STARTUP) | COMPUTER VISION INTERN

Jan 2018 – Mar 2019

San Jose, CA

- Utilized traditional computer vision techniques for camera calibration.
- Programmed multiple raspberry pi cameras to capture images of plants on a vertical plane.

Projects

WWW.BULKDM.APP | (SLACK PLUGIN)

Jan 2022 – Present

- Building a SaaS Slack plugin to enable users to send bulk personalized DMs.
- Built with Django, Slack OAuth, PostgreSQL, Celery, Redis, hosted on Digital Ocean using Docker Compose.

AMAZON AUTO PURCHASER BOT CHALLENGE

Jan 2022

- Wrote script to automatically purchase items from Amazon using only HTTP requests.
- Written in TypeScript. Write up at zachbellay.com/projects/amazon-auto-purchaser.

DEFEATING PERIMETERX ANTI-BOTTING SOFTWARE CHALLENGE

Jan 2022

- Reverse engineered obfuscated, minified anti-botting JavaScript.
- Written in Node.js. Write up at zachbellay.com/projects/defeating-perimeterx.

BUDGET.ZACHBELLAY.COM | (SIMPLE BUDGETING REACT APP)

Mar 2021

- Built a budgeting web app with React and Material UI.
- Site is available at budget.zachbellay.com and write up at zachbellay.com/projects/simple-budgeting-app.

SCU-COURSE-EVALS.COM | (RATE MY PROFESSOR FOR SANTA CLARA UNIVERSITY)

Dec 2019 – Feb 2020

- Launched website for students to get course and professor reviews with >1,100 monthly unique visitors.
- Aggregated 25,000+ course evaluations from Santa Clara University's course evaluation system.
- Built with Python, Flask, Google OAuth, SQLite, Bootstrap, hosted on Digital Ocean using Docker. Write up at zachbellay.com/projects/scu-course-evals.