Vincent Zhao

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Programming Languages: Python, Java, JavaScript, TypeScript, HTML, CSS, Dart, R, SQL, C
Frameworks: ReactJS**,** Tensorflow, NumPy, pandas, Express, Flutter, NextJS, React Native, Electron, Node JS, pytest
Technologies: Git, Fusion 360, Firebase, OpenCV, ROS, Linux, Unix, GitHub, Google Cloud, REST API, Docker, Photoshop, InDesign

EDUCATION:

Purdue University, West Lafayette <div align="right">Graduation: May 2026</div>
B.S. Computer Science, Concentration in Software Engineering <div align="right">Cumulative GPA: 4.0</div>
Relevant Courses: Multivariable Calculus, Object Oriented Programming, Discrete Math, Programming In C, Linear Algebra

WORK EXPERIENCE

Purdue Data Mine Corporate Partners: Space Biology <div align="right">August 2023 – Present</div>
Researcher <div align="right">*West Lafayette, IN*</div>
- Worked under Dr. Marshall Porterfield in using computational approaches to analyzing NASA's Space Biology datasets to understand the effects of microgravity on plants' photorespiration
- Used Python, R, and SQL to analyze data about different plant genomes on Purdue's "Anvil" computing cluster

Purdue IEEE ROV Team <div align="right">August 2023 – Present</div>
Computer Vision Engineer <div align="right">*West Lafayette, IN*</div>
- Worked in a team of 40 to build an underwater vehicle to complete for the MATE International ROV Competition
- Used Computer Stereo Vision to create a 3D depth map to better understand robot pose using digital images
- Created 3d models of underwater environments using depth maps looking at the environment from different angles
- Worked with ROS to communicate control actions and calculations between Raspberry PI nodes and user interface nodes

Amazon AWS Open Search <div align="right">September 2023 – December 2023</div>
Open Source Contributor <div align="right">*West Lafayette, IN*</div>
- Collaborated with Amazon project maintainers and mentors in open-source workflow and OpenSearch codebase
- Wrote train_and_predict function for the Open Search Python ML package to interface with ML Commons Client
- Created unit tests for ML Commons Client using pytest framework to upload, load, and train models

Monta Vista Robotics Team <div align="right">June 2021 – May 2023</div>
Director of Software Engineering <div align="right">*Cupertino, CA*</div>
- Managed a team of 15 to create robot code in Java for the team's 2022 and 2023 world championship qualifying robots
- Created vision system for reflective and fiducial targets to localize robot relative to field within 0.1 meters of its true pose
- Built mobile app and custom data visualization dashboard (React Native/React) for scouting to gain strategic advantages
- Implemented new systems for vision, control, and data analysis, boosting team's winning percentage from 43% to 70%.
- Taught 50 incoming members basic Java, JavaScript, React, and robot control system concepts

El Estoque <div align="right">September 2022 – May 2023</div>
Web Editor <div align="right">*Cupertino, CA*</div>
- Worked on website for elestoque.org, creating different article layouts and multimedia packages
- Analyzed with site analytics in order to optimize articles for more web traffic to articles through metadata
- Wrote articles and designed pages for print magazine using InDesign and Photoshop

PROJECTS

Emotional Oranges | [Github](#) | [Website](#) | (Tensorflow, Python, Kaggle, ReactJS, Firebase, Express, NumPy, pandas)
- Wrote a React front end for the project which took an image uploaded by the user as well as their listening data to generate a Spotify playlist based on the mood detected in the image with songs that fit the mood in the user's taste profile
- Trained Sequential Layers model to detect the mood of an image using a Kaggle dataset with 88% accuracy
- Created Express server to manage authentication for OAuth to gain access to user data from Spotify's REST API
- Wrote cloud functions to preprocess images for speed and model usability by compressing, grayscaling, and resizing.

My Student Sidekick | [Github](#) | [Website](#) | (ReactJS, Firebase, Figma, NodeJS)
- Collection of student tools including schedule, citation machine, note taker, and grade calculator
- Wrote a Node JS script to scrape websites for citation information by looking at metadata hosted on a firebase
- Utilized pub-sub cloud function to check the time and send user notifications through the browser based event timing
- Note Taker with custom text field made using DraftJS which allowed for a simple and accessible user experience