Alex Hadley

contact@alexhadley.net | alexhadley.net | github.com/alexhad6 | linkedin.com/in/alexhadley

Education

B.S. Computer Science

May 2022

Harvey Mudd College, Claremont, CA

GPA 3.98 / 4.00

Experience

Software Engineer

Aug 2022 – Present

Caltech Schmidt Academy — Quantum Photonics Group (Painter Lab)

Pasadena, CA

- Developed packages and tools for researchers conducting multi-qubit quantum control experiments.
- Created a Python package for defining and saving experiment parameters using Data Classes, SQLAlchemy, SQLite, and Zstandard compression, reducing the existing database size from 1.2 TB to 15 MB.
- Built a web GUI for visualizing and editing real-time and historical experiment parameters using TypeScript, React, Plotly, Socket.IO, Python, and Flask, providing new levels of insight and convenience.
- Improved data management by developing a Python package for saving experiment data and metadata in JSON and netCDF files within organized directories.
- Wrote JupyterLab extensions using Python, TypeScript, and React to conveniently plot and analyze data files.

Software Engineer

Sep 2021 – May 2022

Harvey Mudd College — Clinic Program (Capstone Project)

Claremont, CA

- Collaborated with four fellow Computer Science majors to develop a web app for biologists in Long Cai's research group at Caltech to process and visualize spatial genomic data.
- Created a maps-like web interface for efficiently rendering large tissue images with overlaid spatial information using React, TypeScript, and OpenLayers, unlocking new ways to visualize and interpret the data.
- Developed serverless functions to merge, tile, and convert raw microscope TIFF images and spatial data using Python, GDAL, and AWS Lambda, improving data automation.

Software Engineer Intern

Jun 2021 – Aug 2021

Dotdash Meredith — Commerce Team

New York, NY

- Worked on an Agile Scrum team responsible for building and maintaining commerce articles visited by millions per month on websites including People, Travel + Leisure, Investopedia, and Serious Eats.
- Developed a production-ready image carousel component using HTML, CSS, Sass, and Javascript to add depth to product reviews.

Assistant Instructor

Jun 2019 – Aug 2019

MIT Beaver Works Summer Institute

Cambridge, MA

- Taught Python and computer vision to a class of 25 middle schoolers using Jupyter Notebook and OpenCV, culminating in an autonomous mini race car challenge.

Web Developer

Jun 2018 – Aug 2018

La Mano Pottery & Mud Matters

New York, NY

- Built an online gallery using JavaScript, jQuery, and PHP for hundreds of potters to find and view photos of different glaze combinations. Visit at lamanopottery.com/glaze-gallery (password: "Sassy").

Projects

Personal Website — alexhadley.net

Feb 2024 – Present

- Developed a portfolio website using Astro, TypeScript, and Tailwind CSS to showcase my software projects.

California Vote Search (in progress) — cavotesearch.pages.dev

Dec 2023 – Present

- Created a web app using Svelte and Python for Californians to search their state legislators' voting histories.

Galaxy Simulator — github.com/alexhad6/ParallelBarnesHut.jl

Apr 2020 – May 2020

- Built a Julia package to efficiently simulate the motion of stars in a galaxy via a parallel Barnes Hut algorithm.

Skills

Languages: Python, JavaScript, TypeScript, HTML, CSS, Sass, Julia, C++, Java
Packages & Tools: React, Vue.js, Svelte, Astro, Tailwind CSS, Git, JupyterLab, SQLite, Docker, Nginx