



✉ contact@alexhadley.net

Alex Hadley
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 github.com/alexhad6
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Education

B.S. Computer Science
Harvey Mudd College, Claremont, CA

May 2022
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, 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.
- Developed a Python package for saving experiment data and metadata in JSON and netCDF files within organized directories, improving data management.
- 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 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, Better Homes & Gardens, Investopedia, and Serious Eats.
- Developed a production-ready image gallery 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 racecar 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.

Projects

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

Dec 2023 – Present

- Created a website using Svelte, TypeScript, and Python to allow California voters to search for how their state legislators have voted on bills.

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

Apr 2020 – May 2020

- Developed a package for the language Julia to efficiently simulate the motion of stars in a galaxy using a parallel Barnes Hut algorithm.

Skills

Proficient in: Python, JavaScript/TypeScript, React, HTML, CSS/Sass, Git

Familiar with: Vue.js, Svelte, C++, Java, Julia, JupyterLab, Docker, Nginx