

# ALYSSA SAWYER

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## PROFESSIONAL EXPERIENCE

### Solutions Architect Intern, NVIDIA

May 2024 - August 2024

- Developed generative AI application with retrieval augmented generation (RAG) using LangChain to rank resumes.
- RAG app resulted in immediate impact by accelerating the time to recruit and speed of identification of strong candidates.
- Worked with Tier 1 Cloud Service Providers on data center scale validation projects. Supported by travelling onsite.
- Owned Edge AI applications by using NVIDIA Jetson products to run deep learning models locally.

### Data Analyst, Claremont Graduate University

January 2023 - June 2024

- Programming an interactive data visualization website for the CGU Cultural Property Disputes Resource using D3.js.
- Providing a resource for lawyers, journalists, and scholars to track information regarding 400+ cases of stolen artifacts.
- Created and planned an animated map visualization using associated metadata.

### Software Engineer Intern, Samba TV

January 2023 - May 2023

- Architected a synthetic data set by naturally integrating ads in scenes to create 500k+ images using the COCO API.
- Designed logo placement algorithm using Blender Python API. The images are intended to be an open source database.

## EDUCATION

### Harvey Mudd College

August 2022 - May 2026

B.S. in **Computer Science and Math**, Harvey S. Mudd Scholar, Dean's List

### College of San Mateo, Cañada College, Skyline College, and Foothill College

August 2019 - June 2022

Concurrent Enrollment Program

### Sequoia High School

August 2018 - June 2022

International Baccalaureate Diploma, CA Scholarship Federation Life Member, Honor Roll

## SKILLS AND INTERESTS

**Relevant Coursework:** Data Structures, Mathematical Analysis, Discrete Mathematics, Computability and Logic, Probability and Statistics, User Experience Research (TA), Principles of Computer Science, Java, Python, JavaScript, Object-Oriented Program Design, Web Design, Ethical Hacking, Linear Algebra, Differential Equations, Multi-variable Calculus.

**Skills:** Python, Java, C++, JavaScript, R, LaTeX, Linux, Git, Natural Language Processing, Generative AI, Computer Vision.

**Libraries:** NumPy, Matplotlib, PyTorch, Pandas, Beautiful Soup, OpenCV, Selenium, Gradio, LangChain, Streamlit.

**Interests:** Building mechanical keyboards, running, photography, debate coaching.

## RESEARCH

### Artificial Intelligence Researcher, Harvey Mudd College

January 2024 - June 2024

- Led development of a model that predicts drone operator errors in identifying infrastructure faults with over 80% accuracy.
- Used PCA and T-SNE to gauge and view EEG and eye tracking data. Implemented ensemble learning techniques.

### Machine Learning Researcher, Claremont McKenna College

May 2023 - January 2024

- First author of paper at the 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining's Data Science Day.
- Finetuned large language models on high quality textbook data to improve performance by 25% on low resource languages.
- Lead a decrease of OpenAI API usage cost by 70x in the pipeline to compare model performances through analyzing perplexity.

### Computer Science Researcher, Harvey Mudd College

September 2022 - May 2023

- Created a wearable device for a sensory augmentation experiment using Arduino. Led software and hardware development.
- Integrated the project into a Pitzer College philosophy class to improve student learning with an interactive element.

### Machine Learning Project Lead

September 2022 - January 2023

P-ai Claremont Colleges Club

- Managed a team of 4, fully designed a computer vision project with transfer learning using ResNet with PyTorch.
- Used black box optimization with fmin in Javascript and Pokemon API to reverse engineer information in a battle.

## AWARDS

**Harvey S. Mudd Scholar** | Received merit award due to being identified as in the top 2% of the applicant pool.

**Top 4 Debater in the Country** | Placed in the top 4 at Nationals for Lincoln-Douglas debate, after qualifying out of 20,000+.

**Nonprofit Founder** | Founded and ran a debate camp nonprofit for 200+ underprivileged debaters during COVID-19 for three years.