

DHRUV SAINI

dhruvs.vercel.app @ dhruv9saini@gmail.com

EXPERIENCE

A Sustainable Future

Founding Member, Head of Tech | Oct 2023 - Present

- Built and scaled **PCM**, an AI-powered mobile app predicting paper use, to **30,000 students** nationwide in over 150 schools
- Trained symbolic regression model with **PySR** to predict paper consumption based on school demographics
- Leading **team of 20 to increase adoption** by developing nonprofit website and iterating on AI model, now helping save 1.7M sheets of paper per year
- Received **\$30k** in grants supporting sustainability impact and Gold Presidential Volunteer Service Award

Bond Intelligence

Software Engineer Intern | May 2024 - July 2024

- Trained novel price intelligence model to predict Bitcoin token prices with newly released **Titan** architecture from **Deepmind**
- Revamped Kanban-style token management app with **Express** backend and **Tailwind / React** frontend, impacting 24,000 users per year

University of Washington

Quantum Technical Writing Intern | Aug 2024 - Sept 2024

- Developed **AI textbook editing workflow** with **Gemini 1.5 Pro** to perform intelligent analysis on textbook versions, identify, and annotate optimal edits
- Accelerated editing time by **250x**, cutting 120 hours of manual comparisons down to a 30 minute script run

Partify AI

Software Engineer Intern | June 2023 - Sept 2023

- Reduced manual labor by 60x by creating **AI web crawling agent** that extracts structured data to populate venue options in event planner app
- Designed and implemented agent with **Python, Selenium** and **GPT-3.5** to automatically fetch relevant details for businesses in a given area

PROJECTS

Urban Heat Islands: A Geospatial Analysis | Jupyter, Pandas, Matplotlib, Pytorch

- Trained an ML model in **Pytorch** on satellite image samples to predict the most effective method for a city to reduce urban heat stress
- Created **Python** computer vision engine to detect small water bodies from satellite imagery and analyze effects of water infrastructure on heat stress
- Awarded **2nd** place at the prestigious Washington State Science and Engineering Fair

PowerBand | C++, Onshape, KiCad

- Ideated and built a smart resistance band designed to encourage activity and breaks from the screen
- Created custom PCB using **KiCad** with an **ESP32 microcontroller**, contained within a 3D printed case designed with **Onshape**
- Implemented automatic locking, gamifying features, and an insights dashboard with **C++** and **ArduinoBLE**
- Encouraged exercise and limited sedentary screen usage by automatically adjusting screen time limits based on activity

MuseMistral | Python, Pytorch, Transformers

- Finetuned large language model **Mistral-7B** with 100,000+ pages of music data to generate music from a natural language description
- Used **Selenium** and **Python** with **BeautifulSoup** to automatically crawl and collect data, from which the model was trained with **QLoRA**

AWARDS AND HONORS

USACO

Gold Rank | Feb 2024 - Present

WebHack

1st place | Feb 2024

- Developed **Quizard**, a quiz room app with a **Django backend, React / Tailwind** frontend, and **GPT-3.5** tutoring for missed questions
- Enhanced learning efficiency beyond traditional methods by generating personalized concept explanations

Pyxis Hacks II

1st place | Apr 2023

- Built **EssayWay**, a web app providing writing instruction with generated writing prompts, a distraction-free writing interface, and real-time feedback
- Powered by the **OpenAI API, Flask backend, and Tailwind frontend**

FremontHacks, EduHack

1st place, 2nd place | Feb 2023

- Created **Constructive Connections**, an AI moderation Chrome extension using **GPT-3** to instantly filter toxic social media comments for content creators

EDUCATION

Bellevue High School

- 4.0 GPA, President's Education Award
- 100+ hours of technical community service, including teaching a programming club at a local middle and high school
- 13 college-level courses, including AP Calculus, AP Computer Science, AP Physics C