DHRUV SAINI

@ dhruv9saini@gmail.com 425-469-5646

EDUCATION

Bellevue High School
- 4.0 GPA, President's Education Award
- 100+ hours of technical community service completed, including teaching a programming club at a local middle school
- Completed 6 college-level courses, including AP Calculus and AP CS

EXPERIENCE

Bond Intelligence
Software Engineer Intern | May 2024 – July 2024
- Added AI features to token management platform

University of Washington
Quantum Technical Writing Intern | August 2024 – Sept 2024
- Automated key editing and proofreading processes in writing the textbook *Quantum Mechanics For Engineers And Material Scientists: An Introduction* with Professor M.P. Anantram

Partify AI
Software Engineer Intern | June 2023 – Sept 2023
- Automated searching of locations using **Python**, **Selenium** and the **OpenAI API** to increase options for party venues in the app
- Reduced manual labor by 60x by creating an **AI agent** to crawl and find quantitative business details (i.e. description, cost) from unstructured web data

A Sustainable Future
Head of Tech | 2023 - Present
- Leading 20 people to develop a nonprofit website and data science model to reduce paper usage in schools nationwide.
- Developed app with 30,000 users that finds the optimal strategy to decrease paper consumption based on school metadata, utilizing a **Pytorch machine learning** model with **Django** backend and **React** / **Tailwind** frontend

PROJECTS

Urban Heat Islands & Air Pollutant Dispersion: A Geospatial Analysis | *QGIS-LTR*, *Python*, *Jupyter*, *Pandas*, *Matplotlib*, *Pytorch*
- Completed novel independent research on the effect of urban heat islands and their relationship with air pollutant dispersion, as well as temperature, vegetation, water indices, and pervious surfaces
- Used this data to train an ML model to determine the most effective way for a city to reduce urban heat stress
- Created a custom satellite water-body detection engine to complete results on NDWI
- Won second place at the 68th annual Washington State Science and Engineering Fair

PowerBand | *C++*, *AutoCAD*, *Eagle EDA*
- Designed, developed, and built a smart resistance band designed to encourage activity and breaks from the screen
- Created custom PCB using **Eagle** EDA with an **ESP32 microcontroller**, contained within a 3D printed case designed with **AutoCAD**
- Implemented automatic locking, gamifying features, and insights dashboard in **C++**, **AutoHotkey**, and **ArduinoBLE**
- Encouraged exercise and limited sedentary screen usage by extracting insights from quantitative exercise data and automatically changing screen time limits

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 using **Unsloth** and **QLoRA**

AWARDS AND HONORS

USACO
Ranked Gold | Feb 2024 - Present

Pyxis Hacks II
1st place | April 2023
- Created Quizard, a quiz room app with a **Django backend**, **React / Tailwind** frontend,and **GPT-3.5** tutoring for missed questions
- Improved learning efficiency beyond regular testing and grading by creating an understanding for each concept

FremontHacks, EduHack
1st place, 2nd place | Aug 2023
- Created EssayWay, a web app to teach writing through generated writing prompts, distraction-free writing UI, and automatic feedback given throughout the process using the **OpenAI API**, **Laravel** backend, **Tailwind** frontend

SKILLS

- Languages: Java, Python, SQL, HTML/CSS/JS/TS, Ruby, PHP
- Other: React, Prisma, MongoDB, Django, Onshape (3D CAD), Trilingual