

Projects

Spotify Analytics Dashboard Webapp

Oct 2022 - present

- Engineering a webapp using a Tauri + Rust backend with a Svelte + D3.js frontend.
- Crafting visual insights into listening history trends over time.

The Game of Gradients

Nov 2022 - Jan 2022

- Led a small team in creating a game in Rust that builds intuition for a gradient field.
- Designed a real-time gradient field simulation that updates live with user defined functions.
- Showcased to high school MVC teacher who used it as a teaching tool for his class.

Shark Attack Data Analysis

Nov 2022 - Dec 2022

- Formatted heavily inconsistent and non-standardized data on shark attacks.
- Analyzed data to extract patterns and correlations using Julia.
- Compiled visual demonstrations of the data to effectively articulate trends.

Rust Spotify API Wrapper

Aug 2022 - present

- Developed an intuitive library structure as a wrapper for the Spotify Web API in Rust.
- Implemented the PKCE extension for OAuth2 authorization with the API.
- Constructed custom formatting algorithms for objects to improve usability of API.
- Uploaded as an open source library to Rust's Crates.io package marketplace.

The Three Body Problem Simulation

Nov 2021 - Dec 2021

- Built a simulation engine in Python, using PyGame, for the Three Body problem: modeling the chaotic motion of three gravitational bodies.
- Collaborated with a group to improve accuracy and dependability of the simulation.
- Utilized the simulation to gain intuition for the chaotic system's behavior.

Music Recommendation Engine

Jan 2021 - Apr 2021

- Built a machine learning model with TensorFlow to predict if a song will be enjoyed.
- Interfaced with the Spotify web API to grab song data and formatted it with Pandas.
- Constructed a desktop application to view currently playing Spotify song, rate it to train the model, and see the model's prediction for likeability.

Experience

Homework Hotline Tutor

Harvey Mudd College

Sep 2022 - present

- Provide math help through a call-in tutoring service free for kids from elementary to high school.
- Communicate over phone or messaging, adapting my communication style to the situation.

Education

Undergraduate Degree

Harvey Mudd College

2022 - 2026

Current freshman pursuing degrees in Computer Science and Math. Current coursework: Discrete Math (MATH055), Adv. Linear Algebra (MATH173), PHYS024, HSA010, BIOL046, BIOL023. Previous coursework: Principles & Practice: Comp Sci (CSCIO42), Single & Multivariable Calculus (MATH019), PHYS023, CHEM042, CHEM024, WRIT001.

High School

The Nueva School

2018 - 2022

Relevant coursework: Quantum Information and Computation, Algorithms, Computer Security, Computer Vision, Multivariable Calculus, Linear Algebra, Intro and Advanced Machine Learning, Graph Theory, Game Design, Mobile App Design, Cryptocurrency

Skills

- Programming languages: Julia, Rust, Python, Racket, JavaScript, TypeScript, MATLAB, HTML, CSS
- Tools: git, TensorFlow, Pandas, React Native, Unreal Engine, Svelte, Tauri, d3, Yew
- Strong leadership, teaching, and teamwork skills

Hobbies

I love playing tennis and skiing. I also enjoy sleight of hand magic and have organized a group of fellow magicians to perform at birthday parties. Frequently, I can also be found solving puzzles.

Non profit

Volunteered for the Service League of Boys for a year.