Calvin Cai

Palo Alto, CA | (650) 444-8043 | calvin.cai@case.edu | Portfolio | GitHub | LinkedIn

SUMMARY

Motivated Computer Science student with a strong foundation in object oriented programming, scripting, and web development. Currently exploring full-stack programming and AI/ML development. A relentless desire to learn, with a track record of taking on challenges as a fast learner.

SKILLS

Programming Languages: Java, Python, JavaScript, R, SystemVerilog, SQL

Other Tools: Pytorch, React.js, Node.js, Express.js, Bootstrap, HTML, CSS, JSON, JUnit Testing, Linux, MS SQL Server

Skills: Scrum, Git, AWS Cloud Computing, AWS Amplify, AWS S3, AWS Lambda, Microsoft Office

EDUCATION

Case Western Reserve University, Cleveland, OH — Graduating May 2025

Bachelor of Science in Computer Science; Economics Secondary Major; 3.5 GPA

- Coursework: Data Structures, Algorithms, Software Engineering, Full-Stack Programming, Discrete Math, Cloud Computing with AWS, Operating Systems, Database Systems, Artificial Intelligence, Bioinformatics
- Activities: Varsity NCAA Division III Wrestling
- Awards: NCAA Scholar All-American, UAA All-Academic Honoree, Dean's High Honors List

EXPERIENCE

Case Western Reserve University, Cleveland, OH — July 2023 - Current

Bioinformatics Research Fellow

- Leveraging Python programming to analyze genomic data and identify patterns, in efforts to discover potential biomarkers for Urology diseases, contributing to ongoing research efforts
- Conducting research to uncover genomic origins of kidney stones, harnessing online databases and sophisticated software tools to filter genomic data, and applying annotation tools such as ANNOVAR and Bedtools

iD Tech Camps, Stanford, CA — June 2022 - August 2022

Java/Python Instructor

- Taught students without coding experience to understand object-oriented design and programming syntax
- Communicated as a liaison between students, parents, and management

PROJECTS

Iris K-Means Clustering and Neural Network — October - November 2023

Python

- Plotted and classified three species of iris using tools including numPy, pandas, matplotlib
- Wrote a generalized k-means function that inputs a dataframe and cluster number to identifies groups
- Also classified with a neural network and used gradient descent to find best fit weights

8 Puzzle AI Solver — September 2023

Python

- Implemented interactive 8 puzzle game in Python with two separate search algorithms to solve efficiently
- Applied the A* search algorithm, with Manhattan Distance heuristic to determine optimal moves between states
- Utilized a Beam Search algorithm, allowing users to input beam width to manage space complexity

Wordle Clone — April 2023 - May 2023

React, JavaScript, HTML, CSS

- Developed a replayable Wordle game using React.js, showcasing randomized puzzles and keyboard incorporation

RateMyDorm — February 2023 - May 2023

AWS Amplify, React, HTML5, CSS, JavaScript, Bootstrap

- Built a dorm rating website specific to CWRU with filter, post, and read features using AWS Amplify and React
- Collaborated with a Scrum team to develop features based on user requirements

Additional projects can be viewed on my portfolio at https://calvincai.me