

# Alexander Lio

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## EDUCATION

### University of California, Santa Cruz

Bachelor of Science in Engineering in Computer Science

Cumulative GPA: 3.53/4.0, Honors Student - CSP

Santa Cruz, CA

Expected 2026

**Coursework:** Probability & Statistics, Machine Learning Basics, Data Structures & Algorithms, Computer Architecture, Principles of Computer Systems Design, Computer Systems & C Programming, Artificial Intelligence

## EXPERIENCE

### UCSC Baskin Engineering - Data Structures & Algorithms

Santa Cruz, CA

Undergraduate Teaching Assistant

January 2024 - Current

- Facilitated office hours as an outlet for students to debug and understand abstract data structures and algorithms
- Developed with C/C++ on Unix VMs and Docker Containers/Images for testing scripts and runtime constraints
- Instructed students on the derivation of Big-Oh analysis mathematically through limits and conceptually with PAs
- Integrated CI/CD on GitLab to teach branch control and handle grading for the test scripts.

### UCSC Baskin Engineering - Discrete Mathematics

Santa Cruz, CA

Undergraduate Teaching Assistant

April - June 2024

- Held office hours for students to grasp topics of logical and discrete based reasoning, and logical proofs.
- Assisted students with basic programming to replicate simple combinatorics and permutations for labs.
- Evaluated and graded student work, offering detailed comments to improve their understanding and performance.
- Created practice problems and study guides to reinforce key concepts and aid students in preparation for exams

## ACTIVITIES/PROJECTS

### SpotiSearch, Full Stack Developer

June - July 2024

- Developed a dynamic web application using Flask with Python for backend and React with Javascript for frontend
- Deployed and used Spotify API to allow listeners to find unique, new music/artists with ease of one button.
- Maintained a SQL database and constructed SpotifyAPI endpoints and Python/JSON objects with Flask.
- Built a post and fetch system using update callbacks making the UI automatically refresh with new data.

### Blockchain Viewer, Full Stack Developer

November 2024

- Used JavaScript, Node.js, and Express to render a dynamic web application through EJS and CSS on the frontend.
- Deployed Blockchain API endpoints allowing users to track market data for coins and currencies in the chain.

### Code For Fun, Intern/TA

July - September 2022

- Led group instruction, compiling low-level programming abstractions of computers, code, and fundamentals
- Created interactive exercises and projects through Scratch, Python, and Java in Minecraft to stimulate learning.
- Communicated the foundations of programming, incorporating basic skills into engaging team-building activities.
- Inspired innovation within young minds through demonstration and explanation in 100+ kids and teens.

### Inspirat AI, Student/Intern AI/ML Developer

July - August 2021

- Implemented Python scikit-learn, numpy, matplotlib, and pandas libraries to construct basic KNN, CNN models.
- Developed a skin cancer detection, CNN proving an accuracy of 70% and an AUC of 93.7% in its classification.
- Assisted in cleaning datasets, and applied data augmentation to enhance the model's generalization capabilities.
- Compiled and presented comprehensive reports and visualizations of the model's performance metrics

## SKILLS

**Programming Languages:** Go, Python, C/C++, Java, Bash, RISC-V Assembly, SQL, CSS/SCSS, JavaScript, HTML

**Frameworks/Tools:** Git, Linux, Shell Script, Docker, Bazel, Make, Flask, React, Node.js, Express.js, PostgreSQL, VMWare-Workstation/Fusion, Oracle VirtualBox