CYRUS LIU

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Education

University of California, Irvine – B.S. in Computer Science *Sept 2021 - June 2025*

Relevant Coursework: Python Programming, C++ Programming, Data Structures, Machine Learning and Data-Mining, Information Retrieval, Design and Analysis of Algorithms, Computer Organization and Architecture, Algorithm Efficiency

Technical / Analytical Skills

Python, C, C++, Java, JavaScript, HTML, CSS, React, Node.js, Express.js, RESTful APIs, Chakra UI, BeautifulSoup, TKinter, Git, MIPS Assembly, SQL, SolidWorks, Visual Studio, Sklearn, OAuth flows, CI/CD (Vercel & Render)

Work Experience

Python Teaching Assistant | De Anza College *Sept 2022 - Dec 2022*

- Streamlined classroom activities for 40 students to guarantee a high-impact learning experience and engaged in one-on-one support to improve material comprehension
- Collaborated with professor in developing targeted feedback protocols to provide personalized guidance on Python concepts such as regular expression, iterators, generators, and CSV file handling
- Coached 3 individual students on more advanced concepts, leading to a 10% improvement in their overall grade

Projects

Replayify [React, Express, Chakra UI, Spotify Web API] *May 2025 - July 2025*

- Built a full-stack Spotify analytics web app using React and Express, implementing OAuth2 with Spotify's authorization code flow and secure token exchange to fetch and display users' top tracks.
- Deployed frontend on Vercel and backend on Render, demonstrating CI/CD workflow, cross-origin setup, and real-world API integration for a seamless user experience.

American Sign Language Recognition [Python] *Jan 2025 - Mar 2025*

- Developed a convolutional neural network for American Sign Language fingerspelling recognition using TensorFlow, achieving a test accuracy of 99.2%
- Utilized image shearing, flipping, and zooming as data augmentation techniques to improve model generalization, leading to a 2% increase in validation accuracy

ZotReg: Multi-Client Registration System [C] *Jan 2025 - Mar 2025*

- Designed and implemented a multi-client registration system using C sockets, enabling real-time registration for up to 100 concurrent users without data loss
- Optimized concurrency handling, reducing race conditions by 80% and processing 200+ registration requests per second with an error rate below 1%

Wellness & Habit Builder Application [HTML, CSS, JavaScript] Sep 2024 - *Nov 2024*

- Developed a responsive wellness web app with personalized habit tracking, goal setting, and mood-based journaling using HTML, CSS, and JavaScript, featuring real-time clock/calendar and dynamic dark/light theming
- Implemented user authentication, localStorage-based data persistence, and smart browser notifications to deliver a secure, engaging experience tailored to individual users' wellness routines

Search Engine [Python] *Mar 2024 - May 2024*

- Led the development of an efficient Python-based search engine, utilizing Natural Language Processing techniques and the tf-idf model to index and retrieve web documents from a corpus of tens of thousands of documents or Web pages
- Optimized search performance through the use of an inverted index data structure, precomputation of norms for Cosine Similarity, and efficient memory management techniques such as the creation of partial indexes
- Improved data retrieval by implementing a unique URL mapping system to disk using Python's CSV libraries, resulting in a robust search engine with a query response time of under 300 milliseconds