Charles Zhu

✉ charles.zhu04@gmail.com in linkedin.com/in/zhu-charles 🌐 charleszhu.me ⊙ github.com/caz07 📞 408-858-5944

Education

University of California, Los Angeles (UCLA)   **Expected Graduation: June 2026**
GPA: 3.86 (Dean's Honors) | B.S. in Computer Science   *Los Angeles, CA*
- **Activities**: ACM Dev Team (Officer), Foundations Choreography (Events Chair), UCLA SwabSeq Lab, UPE Honor Society, Projected Dance, Association of Chinese Americans
- **Relevant Coursework**: Operating Systems, Algorithms and Complexity, Theory of Computing, Software Construction, Digital Systems, Computer Organization, Data Structures, Multivariable Calculus, Linear Algebra, Discrete Mathematics

Monta Vista High School   **August 2018 – June 2022**
GPA: 4.0   *Cupertino, CA*

Experience

Microsoft (via Centific) | *JavaScript, HTML/CSS*   **June 2024 – September 2024**
SWE Intern   *Redmond, WA*
- Developed and implemented legal electronic data collection automations in nine Microsoft eDiscovery environments
- Integrated daily scheduler for automation scripts into CI/CD pipeline to optimize deployment processes
- Taught daily workshops for 10+ students on topics including HTML/CSS, JavaScript, SQL, and algorithms

UCLA SwabSeq Lab | *Python, Rust*   **February 2024 – Present**
Researcher   *Los Angeles, CA*
- Analyzed DNA sequences of 100+ patients to predict viruses present throughout genomes
- Identified likely contamination between samples using Somalier and eliminated impurities using sample pair visualizations
- Incorporated output into overarching Rust sample workflow involving pre-processing, alignment, and variant-calling

Native English Institute | *TypeScript, React, MySQL, Docker, Kubernetes*   **June 2023 – August 2023**
SWE Intern   *Kobe, Japan*
- Built scheduling algorithm to match 100+ student appointments with teachers per day based on priority, preferences, etc.
- Restructured teacher ranking system and integrated logic into algorithm/database, saving 10+ hours/week of admin time
- Conducted regular cron job tests using Docker and Kubernetes to ensure algorithm accuracy and reliability

ACM Dev Team | *TypeScript, React, Next.js, Node.js, MongoDB*   **November 2022 – Present**
Officer   *Los Angeles, CA*
- Developed template for automated site generation used by ACM committees and viewed by thousands of members
- Refactored MongoDB events database and redesigned user interface for membership portal with 100+ users
- Led architecture migration from React to Next.js for ACM archive project with student learning modules

Projects

Genomic Histone Overlap Predictor | *Python*   **February 2024 - March 2024**
- Implemented a Hidden Markov Model to predict overlaps of 500,000 genomic DNA intervals with histone marks
- Used Baum-Welch expectation-maximum algorithm to improve matrix parameters and refine model accuracy

Four-Year Course Planner | *TypeScript, React, Express, Node.js, MySQL, Firebase*   **September 2023 - December 2023**
- Designed user interface with drag-and-drop courses and notes for four-year plan using React/TypeScript
- Stored data and major requirements in MySQL database and created API endpoints with Express
- Integrated Firebase authentication with frontend and database for user profiles

Interact Tutors | *JavaScript, Flask, MySQL, HTML/CSS*   **August 2020 - July 2022**
- Designed, developed, and deployed full-stack Flask tutoring website to connect high school tutors with students
- Implemented database using MySQL to store information about tutors, tutees, tutoring sessions, and feedback
- 30+ tutors and 350+ total hours of lessons

Relevant Skills

Languages: fluent in Python, Java, C, C++, HTML/CSS, JavaScript, TypeScript, SQL; proficient in C#, Rust, Assembly
Technologies/Frameworks: Flask, React, Express, Node.js, Next.js, MySQL, MongoDB, Firebase, Docker, Kubernetes, PyTorch
Spoken Languages: English (native), Chinese (fluent)