

Crystal Chiu

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EDUCATION

University of California, Irvine
Bachelor of Science in Computer Science

Irvine, CA
Grad. March 2025

EXPERIENCE

Software Engineer Jul. 2025 - Present
The Alliance Group Enterprise Inc. (Engineering Consulting) Costa Mesa, CA

- Driving end-to-end development of an internal time tracking tool, including backend schema design, API planning, feature scoping, and stakeholder coordination to deliver a scalable and maintainable replacement for third-party solutions.
- Revamped and sanitized MySQL production database by enforcing foreign key constraints, removing redundant data, introducing unique constraints, and refactoring schema with Laravel migrations and SQL scripts to ensure data integrity and scalability
- Implemented backend testing pipeline (PHPUnit, factories, seeders) and overhauled role/permission logic, improving system reliability and maintainability while reducing redundant code across API routes
- Remodeled existing logic and architecture for a proprietary productivity management software according to best code practices, patching security risks, redundant logic, and boosting website performance

Software Engineer Mar. 2023 - Dec. 2024
UCI Student Affairs IT (Part Time) Irvine, CA

- Contributed to full-stack applications serving 10K+ students and staff, using AGILE practices and test-driven development (TDD) to consistently deliver high-priority features on tight quarterly deadlines
- Mentored new developers on large legacy codebases (e.g., UCI Commencement App), sharing knowledge on unfamiliar technologies, and maintained onboarding documentation
- Collaborated with supervisor during summer planning for large-scale projects by collaborating with stakeholders, presenting mockups, and translating high-level designs into tickets for the student team
- Designed and optimized MySQL databases with 100K+ records to support vertical scaling, enforce data normalization, and improve query performance by several seconds

STEM Tutor Aug. 2021 - Jun. 2022
Mt. SAC ACCESS Tech Center Walnut, CA

- Tutored students with disabilities in CS, Math, Physics, Writing, and Computer Literacy using personalized lessons and review sessions—resulting in a 100% pass rate for all returning students
- Troubleshoot and resolved technical issues with lab equipment and software for both students and staff

PROJECTS

Popmart Restock Monitor | *Javascript (Node.js), Puppeteer, MongoDB, PM2*

- Developed and deployed an API proxy scraper on a Raspberry Pi to track Popmart's "Labubu" product restocks and product changes (price, availability, etc.), sending real-time Discord alerts to assist users in purchasing high-demand items with unpredictable availability
- Created multiple modes (Regular, Snooze, Throttle) for polite scraping to reduce unnecessary network traffic based on likelihood of restock time and to prioritize "hot items" in the product line
- Implemented robust error handling to manage network failures, page errors, and navigation without data loss or scraper crashes
- Optimized Puppeteer scraping of JavaScript-heavy content, reducing page load and scrape time from 20s to 5s avg per page

Movie Catalogue Website & Android App | *Java, Maven, Apache Tomcat, MySQL*

- Co-developed and deployed a web and Android app managing several GB of movie data, enabling users to upload, search (by genre/title), view, and simulate purchases
- Wrote an efficient data import script using SAX parsing to read large XML files and upload clean data to the production MySQL database in under 10 minutes
- Implemented CAPTCHA, secure authentication, session tracking, connection pooling, and load balancing across 2 Micro EC2 instances for seamless traffic flow and improved personalization

TECHNICAL SKILLS

Languages: Java, C++, Python, PHP, JavaScript, HTML/CSS, SQL (MySQL, Postgres, SQL++)

Frameworks: Vue.js, Node.js, Bootstrap, Flask, Laravel, Testing (PHPUnit, Cypress)

Developer & Workflow Tools: Git/Github, Docker, AWS, Visual Studio, Eclipse, IntelliJ, Jira, Figma, AirTable

Specialty Domains: SQL & NoSQL DBMS, AI/ML (Supervised, Reinforcement Learning), Computer Graphics, Health Informatics