Summer Cai

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EDUCATION

California Polytechnic State University, San Luis Obispo Jun. 2025
Bachelor of Science in Computer Engineering, Minor in Statistics. GPA: 3.6/4.0
Coursework: Data Structures, Design and Analysis of Algorithms, Object Oriented Programming, Statistics, Systems
Programming, Computer Architecture, Database Systems, Operating Systems, Cybersecurity, Deep Learning

SKILLS

Programming Languages: Python, C++, C, Java, Javascript, Swift, HTML, CSS, MySQL, SystemVerilog, Verilog
Frameworks/ Tools: React, Flask, Node.js, PyTorch, PostgreSQL, Visual Studio, Git, Jenkins, JIRA, REST, Google Cloud

EXPERIENCE

Western Digital Jun. 2024 – Sept. 2024
Embedded Software Development Engineering Intern Irvine, CA
- Developed and optimized firmware for enterprise hard disk drives using C++ and Python, incorporating Continuous Integration/Continuous Deployment (CI/CD) practices to ensure scalable, reliable code aligned with industry standards.
- Designed and implemented software algorithms and data paths, contributing to the efficient operation of hardware cores and systems, ensuring firmware functionality met performance expectations.
- Contributed to the restructuring of command handlers by designing standardized command execution files and objects, following the ACS6 standard to ensure consistency and accuracy in handling hardware commands.

Prototype Vehicles Laboratory Sept. 2023 – Present
Software Engineer San Luis Obispo, CA
- Collaborated on the front-end development for the vehicle control system interface, enabling operators to interact seamlessly with low-voltage systems.
- Designed and implemented real-time data visualization features, enhancing the monitoring and display of vehicle metrics to improve usability and operational efficiency.

Suntender Valuations Jun. 2023 – Sept. 2023
Software Engineering Intern Pleasanton, CA
- Actively engaged in the end-to-end software development life cycle, including design, code reviews, system analysis, API documentation and integration, and debugging.
- Led the design and execution of machine learning experiments to improve property valuation accuracy, using Python and machine learning libraries.
- Integrated machine learning algorithms into production systems, collaborating with teams to optimize software performance and extend functionality based on analytical insights.

PROJECTS

Caltrans Traffic Detection System Sept. 2024 - Present
- Developed a real-time vehicle detection and tracking system using Caltrans camera feeds, automating vehicle counts, turning movements, and traffic flow analysis.
- Designed a browser-based dashboard to display automated traffic metrics, classifying vehicles by type and enhancing data accessibility for transportation analysis.
- Improved model accuracy from 60% to 98% through dataset augmentation and optimization for specific traffic patterns, ensuring near real-time performance.

Restaurant Recommender Jun. 2024
- Developed a full-stack web application that provides restaurant recommendations based on user input, integrating the Yelp API to pull real-time restaurant data and provide relevant recommendations with similar price points and cuisine.
- Implemented form handling using Javascript and a Flask backend to handle user queries and displayed results in an interactive interface, improving overall user experience.

Fitness Community Application Jan. 2025 - Present
- Developing an iOS fitness application using Swift and SwiftUI, integrating Apple HealthKit for real-time fitness tracking and activity monitoring.
- Implementing backend services with Firebase to enable user authentication, data synchronization, and cloud storage for progress tracking and goal setting.
- Designing a gamified progress tracking system with dynamic UI components, real-time leaderboards, and social engagement features using Cloud Firestore for seamless group interactions.