ADRIAN VILCHEZ

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EDUCATION

University of California, Santa Cruz *Exp. June 2026*
B.S. Computer Science

TECHNICAL STRENGTHS

Languages	Python, C/C++, JypeScript, TypeScript
Tools & Frameworks	Git, Docker, Firebase, FastAPI, Node.js, Selenium, POSIX
Concepts	OOP, Concurrency, Multithreading, Pipeline Automation, GPU Programming
Libraries	NumPy, OpenCV, PyTorch, Numba
Languages	Fluent in English and Spanish

EXPERIENCE/PROJECTS

IdeaGen - Ai Project Spring - Summer 2025
TypeScript, JavaScript, Node

- Ai-Driven application to analyzes programmer tech stack, GitHub repo, past projects/resume, interests, and time allocation to suggest and personalize roadmap for a project.
- Data pipelines for parsing and Prototyped with Docker/Firebase.

Custom Neural Network Library Spring - Summer 2025
C, Sparse Matrix Optimization, Custom ADTs

- Designed a fully modular neural network framework with custom Matrix and List Abstract Data Types for memory-efficient sparse representation.
- Implemented forward propagation with sigmoid activation, MSE cost function, and several gradient updates functions

Multi-threaded HTTP Server Spring 2025
C, POSIX Threads, Custom Reader-Writer Locks

- Built a concurrent HTTP server capable of serving multiple clients with low latency under heavy load.
- Developed modular components for request parsing, connection handling, and logging, focusing on synchronization and race condition prevention.

Course Registration Tracker Spring 2025
Python, Selenium

- Developed a multi-threaded web scraper for real-time university course availability.
- Reduced response latency via asynchronous polling and event-driven alerting logic.

RELEVANT COURSEWORK

Computer Systems and Concurrency Spring 2024, 2025

- Developed POSIX-threaded applications in C, implemented locks, semaphores, and multi-threading synchronization
- Designed systems managing memory, storage, and abstraction layers

Data Structures and Algorithms Fall 2024

- Created optimized recursive and backtracking algorithms in C/C++
- Uses stacks, dictionaries, graphs, and hash tables for project implementation

Python and Programming Abstractions Spring 2023

- Implemented ADTs including Graphs, Queues, and Stacks
- Applied OOP, recursion, and backtracking techniques

WORK EXPERIENCE

ACE Parking Summer/ Winter. 2023, Summer 2024
Valet Parking Attendant *Palo Alto, CA*

- Delivered professional, high-quality guest services while coordinating efficiently with team members.

P.A.L. (Police Athletic League) Sept. 2021 - June 2022
Youth Mentor *Redwood City, CA*

- Led workshops and activities fostering teamwork, skill development, and community engagement.

SUMMARY

- Computer Science undergraduate at UCSC impacting the full stack. Strong experience in C/C++ systems programming, neural network design, and concurrent application development. Hoping to collaborate in fast-paced and excellent environments.