WYATT AVILLA

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EDUCATION

San José State University *Aug 2025 - May 2027*
Major: M.S Software Engineering, specializing in networking software **CGPA: 4.0** Transcript ☑

Relevant Courses	Database Systems, Operating System Design, Computer Network Design

University of California, Santa Cruz *Sept 2021 - June 2025*
Major: B.S. Cognitive Science, specializing in AI & HCI **CGPA: 3.9** Transcript ☑
Minor: Computer Science

Relevant Courses	Data Structures & Algorithms, Object Oriented Programming, Parallel Programming, Computer System Design, Artificial Intelligence

TECHNICAL STRENGTHS

Programming Languages	Python, C, Rust, C++, Shell, Nix, Lua, SQL
Software & Tools	Git, Linux, GitHub Actions, Docker, NixOS, SQLite, systemd
Frameworks & Libraries	Pandas, LangChain, asyncio, NumPy, Actix Web, Embassy

WORK EXPERIENCE

Backend Developer Intern Sept 2024 - Dec 2024
Lillup

· Built a FastAPI backend with LangChain integration for LLM tool calling, enabling the model to dynamically query user data through a RESTful endpoint that processed multi-turn conversations with tool execution
· Designed and implemented custom tool definitions with automated response parsing, handling JSON deserialization of LLM outputs into function arguments and returning structured responses
· Extended Markdown syntax using markdown-it-py and regex parsing to support structured metadata (tags, progress indicators, due dates) for improved LLM context in time-sensitive applications
· Established code quality standards with static typing (Mypy), Ruff for formatting/linting, and automated CI/CD pipeline through GitHub Actions

Programming Course Developer & Tutor July 2024 - June 2025
University of California, Santa Cruz

· Independently migrated 4 programming assignments and 12 assessments (∼2,000 lines) from C++ to Python, ensuring 100% test compatibility across 1,600+ test cases while implementing modern Python idioms including static typing, generics, comprehensions, and lazy evaluation
· Led group tutoring sessions for data structures and algorithms, focusing on problem-solving strategies for technical interview preparation

PROJECTS

Discord Bot with LLM Tool-Calling Integration ☑ August 2025
Built a Discord bot in Rust enabling Anthropic's Claude to take actions in Discord servers through tool calling, featuring image analysis, message reactions, and configurable interaction patterns with per-server configuration management and probabilistic autonomous responses. Exposed as a NixOS service and packaged with Nix flakes.

Type-Safe REST API with ESP32 Client Integration ☑ June 2025
Built a production-ready REST API in Rust using Actix Web to monitor systemd service statuses, with shared type definitions ensuring compile-time safety between server and ESP32 client firmware. Implemented asynchronous message-passing architecture using Embassy for low-power consumption, packaged as a configurable NixOS service with CLI interface for real-time system monitoring.

Open Source Contributor for Assembly Reverse Engineering ☑ January 2024 - April 2024
Contributed 10 pull requests translating 2,800 lines of PowerPC assembly into 3,200 lines of C code for reverse-engineering *Super Smash Bros. Melee*. Ensured byte-perfect accuracy through GitHub Actions CI that validated the compiled binary against the original. Collaborated through code reviews with distributed team of developers.