

Chu Yi Aaron Herr

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<https://github.com/SpinnerX>

**OBJECTIVE:** Hardware engineer seeking experiences and opportunities in real-time Embedded Systems development.

## EDUCATION

**B.S., Computer Science** May 2026

San Francisco State University, San Francisco, CA

**A.S., Computer Science** May 2023

Clovis Community College, Clovis, CA, GPA: 3.13

## Software Technical Skills

C, C++, Java, Python, CMake, Software Design Patterns, Agile, Scrum methodologies, Object-Oriented Programming, Multi-threading and Concurrency development, compile-time optimization, computer architecture, Operating Systems, Compilers, GDB, automating scripting, Familiar with Unix, and Linux, ffmpeg (C framework), OpenGL, GLFW, Project Management, x86, and ARM32 assembly, CPU emulation development, TCP/IP Networking, Boost (C++ Framework), Bash

## Hardware Technical Skills

Arduino, Raspberry Pi's, Soldering, CAD using OnShape and SolidWorks

## WORK EXPERIENCE

**University of California Berkeley**, Berkeley, CA September 2022 - Present

- I worked in the Advance Bio-imaging Center as a C++ Software Engineer using the Qt Framework.
- Developing application tools designed to monitor data flow for the application user.
- My involvement included designing the UI using QTCreator in a Linux Development environment.
- Problem solving in multithreaded applications handling error handling such as race conditions and incorrect data.

## PROJECT EXPERIENCE

**6502 CPU Emulator | Personal Project | GitHub** Spring 2023 - present

- Reverse engineering the 6502 8-bit processor represented using a higher language, C++.
- Developing how data are sent from the address and data bus to the CPU.
- Develop the fetch, decode, and execute cycle for the 6502.
- Reading the 6502-microprocessor datasheet
- Implementing an ALU to handle the adder function, arithmetic, and other logic operations.

**Libhal Framework | Opensource Contributor | GitHub** Summer 2023 - present

- Contributing to mentor's Libhal robotics framework in implementing a serialize mirror that uses the UART protocol.
- Implementing a serial mirror, which essentially is a serial port taking in N number of serial ports.
- Learning and using the Logic Analyzer for testing the serial mirror feature part of the Libhal framework extension, Libhal-soft.

## CLUB and ACTIVITIES

**Robotics Club | GitHub** Fall 2023 - Present

- In the Intelligent Systems team, building test cases checking for race conditions in the codebase, in concurrent environment.
- In python developed the rover navigation system to navigate terrain efficiently.
- Testing rover's navigation system and developed improvements computing the distance and spatial awareness.

**Logs Git Bash Script | Summer Project | GitHub** Summer 2023

- Developed Git Bash script for students to fetch previous versions of assignments in the case students wipe their code for the assignment.
- Git script to submit logs and with the goal of detecting when students are cheating on professor's server by pulling those logs using commit ID's.
- When students compile their code. The script will flag if there are suspicion of students cheating by a given threshold using time stamp of most recent edited file.