Chu Yi Aaron Herr

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**Education**

**B.S., Computer Science** Fall 2025

San Francisco State University, San Francisco CA

**A.S., Computer Science**

Clovis Community College, Clovis, CA, GPA 3.13

**Software Technical Skills –** 5+ C++ development(14, 17, 20), Python, Java, glsl/gslang (shaders), OpenGL, Vulkan, SPRIV-V, GDB (gnu-debugger), Valgrind/Calgrind, Profiling, Data Structures and Algorithms, Computer Architecture, Operating Systems, Linux/Unix environments, Graphics pipeline, Graphics Architecture design, CMake, OpenCL (GPU development), Strong fundamentals of Linear Algebra, YAML

**WORK HISTORY**

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

* Developed GUI Applications using C++ and the Qt framework.
* Contributed to implementing docking windows for the LLSM application.
* Docking windows were used to enabling users to effectively have a visual hub for data analysis.
* Participated in meetings for implementing new features.
* Worked in a multithreaded environment where managed worker threads have process for streaming data to the docking windows, where users can receive feedback.
* Utilize multiple debugging approaches for error handling in parallel processing.

**PROJECT**

**3D Graphics Engine** | [GitHub](https://github.com/SpinnerX/Game_Engine) Fall 2023 – Present

* Concurrently developing a 2D/3D game engine in C++
  + Implemented a Renderer to do API calls to OpenGL code.
  + Learning GLSL for implementing the shader system.
  + Added Batch rendering to minimize draw calls being made.
  + Added a UI editor for users to interact more easier with the engine.
  + Created profiling tool to monitor by timing performance.
  + Added Serialization/Deserialization enabling users to load/save scenes using YAML.
  + Entity Component System(ECS) for representing objects as entities allowing to contain multiple components.

**6502 Emulator | GitHub** Fall 2023

* Developed an emulator to emulate 8-bit microprocessor, the 6502.
  + Reversed engineered an 8-bit processor called the 6502.
  + Emulated how virtual RAM and ROM for reading, writing data to and from virtual memory.
  + Added the decoding/execution of instructions with different opcodes.

**Asm Compiler** Spring 2022

* Computer Architecture project, which the objective was to create a basic compiler inspired by visual basic.
* Using C++ to represent a basic tokenizer, and reinterpreting commands typed from the user into assembly.
* Implemented basic arithmetic and conditional operations then doing those operations using ARM32 assembly.

**CLUB/ACTIVITIES**

**SJSU Robotics Club** | GitHub Fall 2023 – Present

* Collaborated in the SJSU Robotics club as part of the Intelligence Systems team, using Python for development.
  + Implemented fixes with the GPS for locking a connection with the satellite.
  + Collaborative with my team in working on autonomous tracking for the rover.
  + Openly communicating with the development on autonomy with teammates regarding deadlines to be met.