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), glsl/gslang (shaders), OpenGL, Vulkan, SPRIV-V, GDB (gnu-debugger), Valgrind/Calgrind, 3D development, Profiling, Data Structures and Algorithms, Linux/Unix environments, Rendering/Graphics pipeline, Graphics Architecture design, CMake, OpenCL (GPU development), Strong fundamentals in Linear Algebra, Windows/MacOS/Linux familiarity.

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 Fall 2023 – Present

- Developed a 2D/3D game engine in C++ currently for the past 4 months, by myself.
    - Implemented Renderer to do API calls to OpenGL code.
    - GLSL shaders to implement the shader system for the engine.
    - Added Batch rendering to minimize draw calls being made.
    - Added an editor for users to interact more easier with the engine.
    - Created a profiling tool to monitor decrease in performance by timing important functions.
    - Added Serialization/Deserialization for enabling users to load/save scenes using YAML.
    - Entity Component System(ECS) for representing objects as entities allowing to contain multiple components.
    - Simulating 2D/3D physics

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.

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.
    - Building a rover with a goal to participate in the SARS rover competition.
    - Implemented fixes with the GPS for locking a connection with the satellite.
    - Collaborative with my team in working on autonomous tracking for the rover.
    - Utilize different machine learning methodologies to optimize approaches in taking different multiple inputs.
    - Openly communicating with the development on autonomy with teammates regarding deadlines to be met.