ANTHONY ROSSI

arossi09@calpoly.edu | 831-320-7433 | arossi09.github.io | github.com/arossi09

EDUCATION

California Polytechnic State University **June 2022 - June 2026**
Bachelor of Science Degree in Computer Science *San Luis Obispo*

RELEVANT COURSEWORK

Data Structures, Computer Organization, System Programming, Algorithms, Computer Security, Programming Languages, Computer Organization, Object Oriented Programming and Design, Software Engineering

PERSONAL PROJECTS

Tape Archive | C Dec 2023

- Developed a tape archive utility in C adhering to the USTAR header format, enabling efficient data storage and retrieval.
- **Implemented functionality to archive files and directories** into a USTAR-compliant format, ensuring compatibility with standard tar utilities.
- **Designed an extraction mechanism** to restore archived files while preserving metadata and directory structures.

Repo Analyzer - github.com/arossi09/JavaRepoAnalyzer | Java June 2024 – July 2024

- Developed an interactive file explorer for Java GitHub repositories, providing insights into class and method structures.
- Used JGit to clone Java repositories and analyzed code structure to generate metrics on code health and complexity.
- Utilized metrics such as number of lines per method and conditional density to evaluate and visualize code health.

3D Perlin Sin & Wave Visualizer - github.com/arossi09/WaveSimulation | C++ Sept 2024 – Oct 2024

- Developed a 3D wave simulation in C++ using OpenGL, GLSL shaders, and GLFW/Dear ImGui for interactive controls.
- **Implemented dynamic lighting with ambient, specular, and diffuse components, enhancing visual realism.**
- Created a procedural plane generation system with adjustable division levels for customizable wave detail.

CRast - github.com/arossi09/CRast | C Oct 2024 – Present

- Developing a **3D software renderer from scratch in C**, implementing core rendering techniques without relying on existing graphics APIs like OpenGL or DirectX.
- Engineered a **custom TGA file handling library** that streamlined image reading and writing processes, facilitating direct pixel manipulation for rendering and enhancing overall visual quality in the 3D software project.
- **Created an OBJ file parser** to load 3D models into a custom data structure for rendering.

WORK EXPERIENCE

Gardener Summer 2019 & 2020

- Maintained detailed logs documenting daily operations related to both gardening tasks and coding activities which helped streamline workflows by saving approximately two hours each week spent troubleshooting or searching through past notes.

SKILLS SUMMARY

- Proficient in Java, Python, C, Racket
- Familiar with C++, HTML, CSS, RISC-V
- Interests: graphics and low-level programming