

Samuel Morse

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EDUCATION

University of Florida

Bachelor of Science in Computer Science with a Minor in Physics

2022 - 2026

Current GPA: 3.91/4.0

RELEVANT COURSEWORK

Computer Science: Discrete Structures, Data Structures and Algorithms, Computer Organization,
Computer Graphics, Software Engineering, Operating Systems, Databases, Virtual Reality
Math/Physics: Linear Algebra, Differential Equations, Quantum Physics I, Particle Physics

PROJECTS

N-Body Physics Simulation | C++, OpenGL

January 2026 - Present

- Engineered a real-time N-body simulation in C++ and OpenGL, achieving **144 FPS at 1440p** with **5,000** interacting bodies
- Implemented the **Barnes-Hut algorithm** ($O(n \log n)$) with CPU parallelization to efficiently scale particle interactions
- Designed a rendering pipeline with **phong lighting** and dynamic **LOD** to maximize performance and visuals

OpenGL Raytracer | C++, ImGui

Jan 2024 - Feb 2024

- Created a fully-functioning 3D scene renderer using **ray tracing** algorithms and the **graphics pipeline**
- Rendered spheres, triangles, and other shapes with support for shading, shadows, and multi-bounce reflections
- Built a UI using **ImGui** with functionality to edit the scene and export animations into videos
- Parallelized the program using multi-threading to reduce 1440p rendering times from 20 to 2 seconds (**10x faster**)

Odekeeper Game & Engine | C++, OpenGL

May 2025 - Present

- Built a **custom C++ game engine** using **OpenGL** capable of rendering hundreds of 3D models
- Structured the engine around an **entity component system**, enabling wide-scale flexibility
- Implemented a GPU-driven rendering pipeline using **MultiDrawIndirect** and **bindless textures** to reduce draw-call overhead and improve GPU performance
- Designed a **modular editor framework** using **ImGui**, allowing real-time inspection and editing of engine systems

Zen Demolition | Unity, C#

Aug 2025 - Dec 2025

- Created a VR wreck room where users could vent their stress and anger
- Designed different relaxing nature environments with ambient sounds and environmental interactions
- Implemented a destruction system that allowed users to use bats and other weapons to demolish their surroundings

INVOLVEMENT

CloudStep | Lead Programmer

May 2025 - Present

- Co-founded a **4-member** game engine development team, focused on creating a 3D fighting game
- Directed engine development as the **graphics and architecture lead**

UF Open Source Club | Member

Aug 2022 - Present

Member of the Open Source Club, a group focused on open-source projects and group collaboration

UF ACM Member | Member

Aug 2022 - Present

Member of the UF chapter of ACM

TECHNICAL SKILLS

Languages: C/C++, Go, TypeScript, HTML/CSS, SQL, Rust, Swift, Java, Python, GLSL/HLSL

Frameworks: OpenGL, Svelte, React, SwiftUI, Node.js, Vulkan, GraphQL

Tools & Platforms: Git, Unix/Linux, Apache Cassandra, Docker, Windows, Linux, MATLAB

Technical Areas: Computer Graphics, Low-Level Programming, Web Development, Agile Methodologies, Database Management, Operating Systems