Liam Oliver Stewart

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2nd Year Game Programming Student at the University of Staffordshire

Technical Skills

- Languages: C++, Python, C#, HTML/CSS
- Libraries: OpenGL, GLFW, SDL, SFML, PyGame, JSON, ImGui, ImGuizmo
- Game Engines: Unity, Unreal Engine 5
- Tools: Git, Trello, Visual Studio

Projects

RTS Game Engine – Emperors Armory Studio (project page)   December 2023 – September 2024

- Prototyped an RTS game engine in C++ to simulate hundreds of agent interactions
- Built an agent manager using polymorphism to handle unique entity behaviours
- Engineered Python scripts to automate terrain generation, significantly reducing manual design time
- Led a sub-team of 3 programmers, coordinating via Discord

Luna Engine – Individual (project page)   May 2025 – Present

- Developing a Unity-like engine in C++ with extensible architecture
- Built a CPU-optimized Entity Component System and custom OpenGL rendering pipeline featuring lighting and shadows
- Integrated ImGui/ImGuizmo editor, JSON scene serialization and Lua scripting using the sol2 library
- When faced with issues within the shadows pipeline, developed a custom debug shader to better understand what the shadow cascades had rendered

Cryogen Boss Fight – University (project page)   November 2024 – February 2025

- Built a recreation of the Cryogen boss fight from calamity; a mod for terraria, using the Unity Engine
- Utilized a finite state machine for each of the bosses' phases with clear transitions developed for each phase
- Used Unity's shader and particle system to create custom on-hit effects for the player and boss
- Developed a custom "gun inventory" system to store which gun the player was currently using, utilizing polymorphism to give each gun unique functionality

Education

BSc (Hons) Computer Games Programming, University of Staffordshire – Achieved first class in Graphics Programming, Bespoke Platform Development and the Unity modules.

Employment

Kitchen Porter, Pi's Pizza, Poole, Part-time   May 2024 – September 2024

- Teamwork, working closely with the chefs. I was responsible for cleaning dishes, wiping down sides and sweeping throughout the shift and shutting down once the kitchen was closed
- Adapted to changing demands in a fast-paced environment, such as handling unexpected busy periods, stepping in to support chefs, and adjusting to last-minute changes in cleaning or prep routines to maintain quality in the restaurant
- Followed all policies and procedures, especially the food and health safety

Factory Worker, Lush, Poole, Full-time   May 2025 – September 2025

- Worked collaboratively with a 3–5-person team to keep the production line running smoothly
- Regularly stepped in as acting team lead, coordinating tasks and ensuring quotas were met
- Maintained strict attention to detail and quality control under health and safety regulations
- Adapted quickly to changes in production demands, balancing speed with accuracy to consistently deliver results

Interests – Enjoy playing pool with friends and family. Love games such as Factorio due to the constant problem solving like nature.