

# Alan Gutierrez Ramirez



Software Developer |  C++ & Computer Graphics



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## PROFESSIONAL SUMMARY

Software Developer specializing in C++, computer graphics, and simulation. Proven experience in developing 3D engines from the ground up with OpenGL and PhysX, building robust tools for real-time visualization, and contributing to high-fidelity simulation projects for heavy machinery training. A detail-oriented problem-solver with a Higher National Diploma in Videogame Programming and expertise in the complete graphics pipeline.

## WORK EXPERIENCE

**Junior Software Developer**, LSyM - Laboratorio de Simulación y Modelado. Nov. 2024 - Present

- Engineered and implemented a C++ based test-creation tool that streamlined instructor and user workflows for a heavy machinery training platform.
- Accelerated project timelines by performing rigorous quality assurance, debugging, and optimization on simulators, physics models, and the core engine.
- Designed and structured a scalable and reliable database for simulation data management.
- Contributed to the development of a physics-based simulation platform, focusing on core mechanics and real-time performance.
- Facilitated international deployment by translating complex technical manuals and documentation from Spanish to English.

## RELEVANT PROJECTS

### Graphics Engine Developer (JAM Engine)

- Developed a custom 3D graphics engine from scratch using C++ and OpenGL.
- Implemented advanced features, including real-time lighting, shadows, volumetric lighting, and an integrated sound manager.
- Full technical documentation and demonstrations are available on my portfolio.

### Shelley Manor (PC Game)

- Collaborated in a student game studio to successfully develop and release *Shelley Manor* on Steam.
- Awards:** Best Student Game (Latam Games Com 2025), Top 5 Best Hobby Game (Game Development World Championship, Winter Season).

## EDUCATION

**Gustavus Adolphus College:** Computer Science (Some college), **2014-2017**

**Higher National Diploma in Video Game Programming**, ESAT, Valencia, Spain, **July 12, 2024**

## SKILLS

### TECHNICAL SKILLS

- Languages:** C++, C#, C, Python
- APIs & Engines:** OpenGL, Unreal Engine 5, Unity, PhysX
- Development Tools:** Visual Studio, Git, Perforce
- Databases:** SQL, Database Design & Management
- Core Competencies:** 3D Graphics, Game Engine Architecture, Real-Time Simulation, Physics Programming, Debugging & Optimization

## LANGUAGES

- Spanish: Native, English: Fluent