Diego Fonseca

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Introduction

I specialize in graphics programming, utilizing OpenGL, Vulkan, and Metal. I enjoy experimenting with new domains to meet the demands of specific projects, whether learning new languages, APIs, or exploring completely new fields of software engineering.

I'm a strong supporter of open-source projects, and anyone can find my contributions via my GitHub handle: Just Feeshy

Experience

The JTC Modding Team
C++, Haxe, GLSL, Lua
September 2021 – December 2022
Lead Programmer

- Reduced RAM usage from **3 GiB to 600 MB** by moving large assets to GPU memory and optimizing resource loading; improved runtime performance and supported a release that reached **720k views** on YouTube and **14k downloads**.
- Built an engine-level modding framework for Friday Night Funkin' with in-game tools/UI and implemented custom LuaJIT scripting, enabling non-engine contributors to implement content via scripts and reducing turnaround time for changes.

Orc Face Games
C++, Objective-C, OpenGL, AngelScript, Python
February 2024 – June 2024
Game Engine Developer

- Spearheaded the macOS launch of the flagship 3D dungeon-crawler *HarleQuest!* Originally a crowdfunded Dreamcast/PC roguelike that raised **£15,728** from **275 backers**, this launch significantly expanded platform reach and market accessibility.

Two-Way Ray-marching Research
3D Math, C, WebAssembly, Emscripten, Lua, GLSL, OpenGL
December 2024 – Present
Lead Researcher

- Conducted research on optimizing ray-marching, a technique for rendering complex 3D scenes via per-pixel ray traversal. Achieved a **20%** performance boost while maintaining quality standards crucial for successful gaming application launches.

Open Source Projects & Contributions

Spoopy Framework
C, Metal, Slang, NodeJS
April 2021 – Present
Creator

- Created as a high school capstone project for desktop platforms, this framework later evolved into a versatile graphics framework powering custom video games, visual effects tools, and real-time rendering applications.
- Recognized by the OpenFL development community for pioneering Vulkan/Metal integration.

The Slope Game
Java, Kotlin, LWJGL, OpenGL, GLSL
October 2024 – Present
Leader

- Designed and led educational sessions for college students, demystifying computer graphics through hands-on applications of linear algebra and core computer science concepts like circular buffers.

Education

AS **Northern Virginia Community College**, Engineering — June 2023 - December 2025

- GPA: 4.0/4.0

VS **Stanford University**, Computer Science — June 2024 – August 2024

- GPA: 3.7/4.0
- **Coursework:** Mathematical Foundations of Computing, Computer Organization and Systems

Technologies

Languages: C++, C, Java, Objective-C, Haxe, GLSL, JavaScript, Lua, Kotlin, AngelScript, Python, C#, WebAssembly

Technologies & APIs: OpenGL, WebGL, Vulkan, Metal, Git, Vim, XCode, Unity, Emscripten

Awards

Academies of Loudoun Hackathon 2nd Best Overall Project — May 2022 & May 2023
C#, Unity

Competitive Programming at University of Maryland — February 2023
Java