

Jacob Fernandez

Software Engineer | San Antonio, TX

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EDUCATION

University of the Incarnate Word

Expected Dec. 2026

Accelerated B.F.A./M.F.A. in Game Programming, Minor in Computer Information Systems

San Antonio, TX

- **GPA:** M.F.A. 4.00, B.F.A. 3.51
- **Honors:** Triple A Programmer Award (2024), Dean's List (four semesters)
- **Coursework:** Data Structures and Algorithms, Object-Oriented Programming, Advanced C++, 3D Math

EXPERIENCE

University of the Incarnate Word

Aug. 2025 – Jul. 2026

Teaching Assistant, Advanced C++ and Systems Programming

San Antonio, TX

- Ran **code reviews** for **20 students** every two weeks, on every project
- Taught advanced **C++** to two cohorts, covering memory management and design patterns
- Wrote the lecture decks, labs and project specs that students onboarded from

Project FairyTale, M.F.A. Graduate Studio Team

Aug. 2025 – Aug. 2026

Gameplay Programmer, turn-based horror game (completed)

San Antonio, TX

- Shipped the completed game in one year with a cross-functional team of five, in **Agile sprints**
- Built **seeded procedural generation** for room layouts, plus every item and the full UI
- Took requirements from designers and artists and integrated their work mid-sprint

PROJECTS

PlayGraph | *Python, FastAPI, SQLAlchemy, Redis, JavaScript* | [GitHub](#) | [Live Demo](#)

Sep. 2026 – Present

- Built a full-stack app alone: a FastAPI **REST API** of about 40 endpoints, a job queue and the front end
- Cut p95 latency from **49 s to 41 ms** under load with a stored column and **Redis** caching
- Ran Steam and PlayStation library syncs as background jobs on a Redis queue
- Secured sessions with CSRF tokens and a sliding-window rate limiter written in Lua
- Gated every push on **242 tests** in GitHub Actions, plus pip-audit and bandit security scans

SkinAPI | *C++17, Crow, libcurl, CMake* | [GitHub](#) | [Live Demo](#)

Feb. 2026 – Oct. 2026

- Built a **C++17 REST API** serving live CS2 skin prices from two market sources as JSON
- Wrote a **0/1 knapsack** budget optimizer, with a greedy fallback for large budgets
- Cached the full price list, staying within a **50-call** monthly API quota

OpenGL Rendering Engine | *C++17, OpenGL, GLSL, Lua, ImGui, CMake* | [GitHub](#)

Apr. 2025 – Sep. 2026

- Wrote a renderer on raw OpenGL: **206M triangles** per frame at 14.1 ms GPU time at 1440p
- Profiled with GPU timer queries read one frame late, so the CPU never stalls
- Added an ImGui editor and Lua-defined scenes, so changes need no recompile

LEADERSHIP

UPGRADE Program, University of the Incarnate Word

Nov. 2022 – Nov. 2025

UPGRADE Ambassador

San Antonio, TX

- Served as the spokesperson for the programming side of UIW's game development program
- Explained technical work to prospective students and families at recruiting events

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C++17, C#, SQL

Back End: REST APIs, FastAPI, PostgreSQL, SQLAlchemy, Redis, job queues

Front End: React, Next.js, TypeScript, HTML/CSS, responsive layout, ARIA accessibility

Testing and DevOps: pytest, Locust, GitHub Actions (CI/CD), Docker, Linux, Git, CMake

AI Tools: Claude Code, Cursor, OpenAI Codex, GitHub Copilot