

Alex Da Vera Cruz

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Education

University of Central Florida

Expected May 2027

Bachelor of Science in Computer Science

Orlando, Florida

- **Relevant Coursework:** Data Structures & Algorithms, Linear Algebra, Calculus, Physics, OOP, Software Development, System Software, Computer Graphics, Operating Systems.

Technical Skills

Programming Languages: C++, C, C#, Python, Java, Lua, JavaScript, HLSL, GLSL.

Tools & APIs: Git, OpenGL, .NET, Unity, Unreal Engine, CMake, Firebase, Direct3D.

Experience

Frasca International (FlightSafety)

May 2026 – Present

Graphics Engineer Intern

Urbana, Illinois

- Contributing engine-agnostic **C++20** code to company's Unreal Engine fork.
- Building an Airport Clutter System for flight simulators.
- Participating in agile development workflow in a large team setting.

Graphics Programming Knights | [LinkTree](#)

June 2025 – Present

Founder & Workshops Director

Orlando, Florida

- Established UCF's first Computer Graphics Programming club, growing a community to over **130 members in 3 months** by leading a team of **five officers** to organize technical workshops, industry events, and club collaborations.
- Taught workshops on topics including shader programming, rendering techniques, C++, OpenGL, and math for CG.

Limbitless Solutions

August 2024 – May 2026

Assistant Scholar – Games Team

Orlando, Florida

- Developing three VR and MR therapeutic serious games in Unity, serving **50+ patients** with limb difference.
- Collaborating with a multidisciplinary **team of 16** to engineer and deliver three distinct therapeutic games, contributing to both core programming and systems architecture.

Computer Graphics Lab | [Repository](#)

Jan 2025 – May 2025

Undergraduate Research Assistant

Orlando, Florida

- Conducted research under Sumanta Pattanaik at the University of Central Florida by internalizing and implementing technical research papers into code/visualizations.
- Applied the theory and practical applications of physically based rendering, shader programming, and other Computer Graphics topics into my work.

Projects

derezzed | C++, OpenGL, SDL3 | [Repository](#)

- Building toy graphics engine focused on data-oriented design principles and a small API-agnostic interface.
- Reduced frame draw time by **~60%** via instancing and implementing an arena allocator/buffer for GPU-space memory.

Hack-a-Raster | C++, SDL3 | [Repository](#)

- Implemented a CPU Rasterizer from scratch with vector/matrix math, indexed rendering, barycentric interpolation, depth testing, and perspective projection.
- Built in raw C++, only relying on SDL3 for window handling and pixel drawing.

Limbitless Journey MR | Unity, C#, Meta XR SDK

- Selected as an exhibitor for the alt.ctrl.GDC 2025 showcase at the Game Developers Conference in San Francisco.
- Re-implemented a desktop training game for ALS patients into a new Mixed Reality experience with EMG-controlled wheelchair input.
- Updated proprietary Bluetooth Low Energy Unity interface for a new EMG controller, implementing BLE callback flow.