

# Liam McKenna

[work@liamdouglas.com](mailto:work@liamdouglas.com) | (321) 607-2168 | [liamdouglas.com](http://liamdouglas.com) | [LinkedIn](#) | [GitHub](#)

## SUMMARY

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Master's student in Computer Science specializing in computer graphics and video game development, with demonstrable proficiency in C++, C#, GLSL, and HLSL. Expertise in designing robust and streamlined software systems, formed through extensive development experience in Unity, Unreal Engine, and self-authored 3D application programming. Eager to gain real-world experience in the design and development of commercial video games and video game engines.

## EDUCATION

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**Master of Science (M.S.), Computer Science** Expected Spring 2026  
*University of Florida, University of Kyoto* Gainesville, FL

**Bachelor of Science (B.S.), Computer Science** Summer 2024  
*University of Florida* Gainesville, FL

- GPA: 3.58/4.00 (Cum Laude)
- Minor: Digital Arts and Sciences (Game Development)

## EXPERIENCE

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**Academic Researcher** Fall 2025 - Present  
*University of Kyoto — Project AirSim* Kyoto, JP

- Studied and worked within Unreal Engine's C++ source code to develop the fork used for computer vision research
- Implemented advanced rendering techniques into Unreal Engine 5 through self-authored HLSL shader development

**Academic Researcher** Jan 2025 - Summer 2025  
*University of Florida SurfLab* Gainesville, FL

- Investigated experimental approaches to producing global illumination in a real-time OpenGL environment
- Attained performant pixel-accurate shadow casting of complex NURBS surfaces with novel use of past research

**Software Development Intern** Summer 2023  
*United Wholesale Mortgage* Pontiac, MI

- Garnered applied experience in agile software development principles by operating under the scrum framework
- Developed an integrated software stability inspector with C# for end-to-end use in proprietary software

## PROJECTS

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**APGP | Multipurpose Custom 3D Rendering Environment** Fall 2024 - Summer 2025  
*C++, OpenGL, GLSL* [GitHub](#)

- Created a highly modular real-time 3D application in C++ using the OpenGL graphics API
- Implemented an Entity-Component System (ECS), Scene Graph, and support for Physically-Based Rendering (PBR)
- Engineered fully dynamic Lua script insertion, asset management, and scene generation at runtime

**PowerLine | Original Minecraft Multiplayer Minigame** Fall 2025  
*Java* [GitHub](#) | [Play Game](#)

- Led the full development cycle of a novel multiplayer game mode for Minecraft through custom plugin programming
- Achieved publication on the popular and selective Minecraft minigame hosting platform, StickyPiston

**Topposition | Procedurally Generated Game Built on Custom 2D Engine** Fall 2023  
*C++, SFML* [GitHub](#) | [Presentation](#)

- Developed a feature-complete strategy game in a proprietary engine boasting a procedurally generated terrain system
- Presented a lecture to UF's game development club, DevLUP, on the lessons learned throughout development

**Itch.io Showcase | Extended Game Development Portfolio** Fall 2022 - Present  
*Unity, C#, Batch* [Portfolio](#)

- Attained extensive experience working in Unity and C# scripting from the development of several unique projects
- Achieved multiple top placements and academic recognition in game jams, hackathons, and class projects

## TECHNICAL SKILLS

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**Languages:** C++, C#, GLSL, HLSL, Lua, Java, Batch

**Tools & Frameworks:** Unreal Engine, Unity, OpenGL, DirectX, Blender, Maya, Visual Studio

**Specialized Knowledge:** Graphics Programming, Game Engine Architecture Design, 3D Modeling ([Portfolio](#))