

# Liam McKenna

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## 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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<b>Master of Science (M.S.), Computer Science</b> <i>University of Florida, Kyoto University</i>	Expected Spring 2026 <i>Gainesville, FL</i>
<b>Bachelor of Science (B.S.), Computer Science</b> <i>University of Florida</i>	Summer 2024 <i>Gainesville, FL</i>
<ul style="list-style-type: none"><li>• GPA: 3.58/4.00 (Cum Laude)</li><li>• Minor: Digital Arts and Sciences (Game Development)</li></ul>	

## EXPERIENCE

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<b>Academic Researcher</b> <i>Kyoto University — Project AirSim</i>	Fall 2025 - Present <i>Kyoto, JP</i>
<ul style="list-style-type: none"><li>• Studied and worked within Unreal Engine's C++ source code to develop the fork used for computer vision research</li><li>• Implemented advanced rendering techniques into Unreal Engine 5 through self-authored HLSL shader development</li></ul>	
<b>Academic Researcher</b> <i>University of Florida SurfLab</i>	Jan 2025 - Summer 2025 <i>Gainesville, FL</i>
<ul style="list-style-type: none"><li>• Investigated experimental approaches to producing global illumination in a real-time OpenGL environment</li><li>• Attained performant pixel-accurate shadow casting of complex NURBS surfaces with novel use of past research</li></ul>	
<b>Software Development Intern</b> <i>United Wholesale Mortgage</i>	Summer 2023 <i>Pontiac, MI</i>
<ul style="list-style-type: none"><li>• Garnered applied experience in agile software development principles by operating under the scrum framework</li><li>• Developed an integrated software stability inspector with C# for end-to-end use in proprietary software</li></ul>	

## PROJECTS

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<b>APGP   Multipurpose Custom 3D Rendering Environment</b> <i>C++, OpenGL, GLSL</i>	Fall 2024 - Summer 2025 <a href="#">GitHub</a>
<ul style="list-style-type: none"><li>• Created a highly modular real-time 3D application in C++ using the OpenGL graphics API</li><li>• Implemented an Entity-Component System (ECS), Scene Graph, and support for Physically-Based Rendering (PBR)</li><li>• Engineered fully dynamic Lua script insertion, asset management, and scene generation at runtime</li></ul>	
<b>PowerLine   Original Minecraft Multiplayer Minigame</b> <i>Java</i>	Fall 2025 <a href="#">GitHub</a>   <a href="#">Play Game</a>
<ul style="list-style-type: none"><li>• Led the full development cycle of a novel multiplayer game mode for Minecraft through custom plugin programming</li><li>• Achieved publication on the popular and selective Minecraft minigame hosting platform, StickyPiston</li></ul>	
<b>Topposition   Procedurally Generated Game Built on Custom 2D Engine</b> <i>C++, SFML</i>	Fall 2023 <a href="#">GitHub</a>   <a href="#">Presentation</a>
<ul style="list-style-type: none"><li>• Developed a feature-complete strategy game in a proprietary engine boasting a procedurally generated terrain system</li><li>• Presented a lecture to UF's game development club, DevLUP, on the lessons learned throughout development</li></ul>	
<b>Itch.io Showcase   Extended Game Development Portfolio</b> <i>Unity, C#, Batch</i>	Fall 2022 - Present <a href="#">Portfolio</a>
<ul style="list-style-type: none"><li>• Attained extensive experience working in Unity and C# scripting from the development of several unique projects</li><li>• Achieved multiple top placements and academic recognition in game jams, hackathons, and class projects</li></ul>	

## 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](#))