

# Robert Keller

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## Education

University of Michigan Engineering 2019-2023  
CSE Undergraduate Degree - GPA: 3.84/4.0  
Courses Include: Algorithms, Compilers, Operating Systems, Linear Algebra, Physics

## Skills

### Proficient in

- C++, C
- UE4, UE5
- Perforce, Git LFS, Jira
- VS, Rider, VSCode

### Familiar with

- C#, Python, JS, Java
- D3D11/12, Vulkan, Unity
- WPF, XAML, MVVM
- Valgrind, PIX

## Experiences

### **Ascendant Studios**

Software Engineer (C++, UE5, PS5, XSX/S)

Oct 2023 - Present

└ Junior Gameplay Engineer

Sep 2022 - Oct 2023

└ Engineering Intern

Jun 2022 - Sep 2022

#### ○ Immortals of Aveum - AAA single player, story-driven, fantasy FPS in Unreal Engine 5.1

##### Combat

- Worked with Combat Designers to prototype and build major bosses (Exalted Construct, Sandrakk, Morbane)
- Fixed bugs in major systems including AI (Behavior Trees), Motion Correction (Animation Adjustment), Recoil, and Combat Ability flow
- Implemented difficulty system used throughout the game to tune enemy damage and health

##### Level Systems

- Took ownership of Encounter System (AI enemy spawning) and reworked major portions of it to better support handoffs, suspend/resume, and save/load. Also improved performance of preloading, spawn throttling, and pooling.
- Completely reworked quest breadcrumb algorithm with a focus on improved performance and player experience
- Worked closely with Level Designers to assist in using features and fixing bugs in all previously mentioned systems

#### ○ Unannounced UE5 Multiplayer Project

- Completely rearchitected Inventory, Talent, and Character Attribute systems to replicate reliably and efficiently over all network conditions
- Architected and implement account data system integrated with EOS
- Optimized combat abilities for efficient replication and prediction

### **MCubed VR Network Visualization Research**

Lead Programmer (C#, Python, Unity)

May 2021 - June 2022

└ Network Research Programmer

February 2020 - May 2021

#### ○ Interactive Social Network and Graph Visualizations for VR

- Developed real time graph analysis algorithms for community detection, completely rewriting the code-base from scratch to ameliorate tech debt accumulated over the course of the project
- Optimized forced-directed graph layout methods using compute shaders
- Wrote up detailed reports and research for Ross Business School to more effectively analyze community based graphs

### **Lenticular Games**

Founder/Lead Programmer (C++, UE5)

September 2021 - Present

#### ○ Codename M.O.G.U. - Indie Atmospheric Puzzle Game

- Engineered and architected custom player movement solution and rigid body physics simulation from scratch featuring variable gravitation directions
- Implemented and optimized custom shaders, overseeing lighting and VSM budgets, evaluating level streaming solutions, and taking advantage of cutting edge rendering features
- Organized and outlined production schedule to ensure the team stays on schedule and can hit deliverable deadlines