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, OS, Linear Algebra, Physics
Greenhills School, Ann Arbor, MI 2015-2019

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

Software Engineer September 2022 - Present
Ascendant Studios (C++, UE5, PS5, XSX/S) Team of 100

○ 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 Correct (Attach 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 character handoffs, suspend/resume, and save/load
- 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

Lead Programmer February 2020 - June 2022
MCubed VR Network Visualization Research (C#, Python, Unity) Team of 5

○ 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 shoulders
- Wrote up detailed reports and research for Ross Business School to help them more effectively analyze community based graphs

Founder/Lead Programmer September 2021 - Present
Lenticular Games (C++, UE5) Team of 2

○ Codename M.O.G.U. - Indie Atmospheric Puzzle Game
- Engineer and architect custom player movement solution and rigid body physics simulation from scratch
- Implement and optimize custom shaders, overseeing lighting and VSM budgets, evaluating level streaming solutions, and taking advantage of cutting edge rendering features
- Organize and outline production schedule to ensure the team stays on schedule and can hit deliverable deadlines

Project Lead/System Architect July 2021 - August 2021
University of Michigan XR Initiative (C#, WPF) Team of 5

○ Personal Protective Equipment Detection App
- Architected multi-threaded layer to interface with Azure Kinect cameras, maximizing application responsiveness
- Designed readable UI allowing medical professionals to easily determine if they have correctly applied PPE

Level Designer and Gameplay Programmer July 2021 - May 2021
Mushroom Stewdios (C#, Unity) Team of 5

○ Mogu: Indie 2D Puzzle Platformer
- Designed numerous puzzles that explored our unique mechanic, increasing player interaction and interest
- Edited and filmed captivating trailer, immediately hooking potential players of the game