SEAN NIKKEL
ENGINE PROGRAMMER

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SKILLS

Languages/Frameworks

`C++` `Vulkan` `OpenGL` `Python`
`GLSL` `C#` `Qt` `ImGui`

Software

`Visual Studio` `Git` `Unreal Engine 4`
`RenderDoc` `Unity` `GIMP`

EDUCATION

BS IN COMPUTER SCIENCE (*summa cum laude*)
Focus: Real-Time Interactive Simulation
Minor: Mathematics

DigiPen Institute of Technology

Graduation Date: Apr 2022

ACADEMIC PROJECTS

GRAPHICS PROGRAMMER (Team of 2)
Flux Engine – 3D Vulkan Renderer

Sep 2021 – May 2022

- Implemented volumetric lighting using raymarching to simulate fog
- Researched and added variance shadow mapping using cubemap rendering
- Integrated screen-space reflection into rendering pipeline
- Utilized RenderDoc for debugging Vulkan calls and shaders on the GPU

LEAD PROGRAMMER (Team of 14)
Repossession – 3D Stealth Action

Sep 2020 – Apr 2021

- Collaborated with artists, game designers, and sound designers remotely through online meetings and SVN
- Designed a ghost possession system using Unreal Engine 4's pawns and controllers
- Examined the engine's source code to track down and fix Blueprint bugs

LEAD PROGRAMMER (Team of 13)
Nohra – 2D Precision Platformer

Sep 2019 – May 2020

- Designed an engine framework in C++ that utilizes ECS to manage game objects
- Worked with artists and designers to develop and refine an ImGui-based editor for level creation and parameter modification
- Implemented 3D lighting in OpenGL to enhance the game's laboratory aesthetic
- Managed and assisted a team of 6 programmers with implementing engine features to meet milestone deadlines
- Created a loading screen that uses an asynchronous asset loading system

PERSONAL PROJECTS

SOLE DEVELOPER
OpenGL Game Engine

Sep 2019 – Present

- Implemented object-oriented style Lua gameplay scripting
- Created an editor using ImGui to create, edit, and delete objects and scripts
- Implemented PBR with skybox-based diffuse and specular lighting
- Added JSON serialization for prefab functionality and saving/loading