

SEAN NIKKEL

PROGRAMMER

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SKILLS

Languages/Frameworks

C++ Vulkan OpenGL Python
GLSL C# HTML5

Software

Visual Studio Git Unreal Engine 4
RenderDoc Unity GIMP

EDUCATION

BS IN COMPUTER SCIENCE

Focus: Real-Time Interactive Simulation
Minor: Mathematics

Expected Graduation: Apr 2022

DigiPen Institute of Technology (GPA: 3.87)

ACADEMIC PROJECTS

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

Sep 2021 - Present

- Collaborated with another programmer to create a Vulkan graphics engine in C++
- Researched and added variance shadow mapping using cubemap rendering
- Implemented volumetric lighting using raymarching to simulate fog
- 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
- Worked in Unreal Engine 4's shader editor to create various post-process effects
- Debugged the engine's source code to track down and fix 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
- Implemented 3D lighting in OpenGL to add to the game's laboratory aesthetic
- Managed and assisted a team of 6 programmers with implementing engine features to meet milestone deadlines
- Worked with artists and designers to develop and refine an editor for level creation and parameter modification
- Created a loading screen that uses an asynchronous asset loading system

PERSONAL PROJECTS

SOLE DEVELOPER OpenGL Voxel Engine

Dec 2019 - Jan 2020

- Utilized OpenGL to render an infinite voxel-based world constructed of polygons
- Implemented vertex-based ambient occlusion created by sampling nearby voxels
- Used seeded random number generators and simplex noise to procedurally generate a mountainous forest scene
- Designed and implemented voxel-based raycasting and collision resolution