

COLE PETERSON

Software Engineer

[Email](#) - [Portfolio Website](#)

SKILLS

Languages: C / C++, Typescript / Javascript, Python, GLSL / HLSL

Tools: Blender 3D, Photoshop, Unreal Engine 5, Unity, ComfyUI, Git, OpenGL, Node.js, Linux

PROFESSIONAL EXPERIENCE

Technical Artist | Rogue Rooster | Remote

Apr. 2024 – Mar. 2026

- Developed highly customizable master materials used across environments, characters, and assets
- Built core systems for runtime customizable characters and weapon configurations
- Implemented network synchronized Niagara based visual systems for gameplay features
- Designed procedural content generation systems with PCG for environment creation
- Managed large libraries of assets and standardized key optimization workflows across the project
- Developed a tool that converts SpeedTree models to the new Unreal skeletal Foliage system
- Created a large scale GPU based environmental biome system that updates in real-time
- Designed a custom lighting and sky system for seamless transitions between space and planet environments
- Utilized local AI image generation using ComfyUI for various applications such as image segmentation, quick depth / normal maps and texture prototyping.

PROJECT EXPERIENCE

Online Multiplayer Drawing App | Node.js | Websockets | React

Jan. 2026 – Present

- Built a multiplayer drawing app where users collaborate on a large canvas in real-time
- Developed both front-end and back-end systems with Typescript and WebSocket servers
- Canvas is divided into chunks and loaded from the server only when needed
- Strong focus on reducing overall network traffic by introducing strict data transfer rules
- Deployed the Node.js server to a remote Linux virtual machine configured from scratch
- Integrated agentic AI workflows for automatic unit testing and code reviews

Basil and the Isles of Spice | Technical Art | Unity | School Project | [Steam Page](#)

Sept. 2023 - May 2024

- Developed core shader workflows and visual effects in a 31 person multidisciplinary team project
- Wrote a custom procedural and interactable grass system using geometry shaders
- Managed the art pipeline and enforced asset optimization best practices

Custom C++ Render Engine | OpenGL | [GitHub](#)

Feb. 2022 – Aug. 2023

- Render pipeline supports deferred rendering, post process pass and multiple mesh materials
- Implemented FBX asset loading pipeline and a scene management system
- Developed dynamic lighting system with shadow mapping for point lights
- Designed and implemented an Entity Component System (ECS) for scalable architecture
- Created a programmable particle system for real-time visual effects

WebGL Fragment Shader Viewer | WebGL | Shaders | [Demo](#)

Mar. 2022 – May. 2022

- Developed a fully custom browser based fragment shader viewer to show off my personal shader art
- Supports multi-pass shader systems for complex non-deterministic simulations
- Supports mouse and keyboard input

EDUCATION

Bachelor of Science in Computer Science in Real-Time Interactive Simulation (RTIS)

DigiPen Institute of technology (2024)

Associate of Science

South Seattle Community College (2019)