

Suhwan Kim

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Overall

+7 years C++ programming Experience, proficient in Vulkan, DirectX12, and OpenGL API.
Experienced multiple academic team projects, proficient in A* pathfinding and AI.
Seamless communicator, facilitating effective problem resolution.
Committed to continuous learning and skill expansion.

EDUCATION

DigiPen Institute of Technology (Redmond, Washington) Apr. 2023
- Bachelor of Science in Computer Science in Real-Time Interactive Simulation

SKILLS

C++, C#, C, Unity, SVN, Git, OpenGL, DirectX12, Vulkan

ACADEMIC PROJECTS

RoyalStraightFlush / C# / Unity / Team of 6 Sep 2021 - Apr 2022
- Designed and implemented melee enemy AI and stage 3 boss AI.
- Successfully improved the game's UI through modification and setting up UI elements.
- Collaborated with team members to create engaging gameplay experiences and resolve technical issues

PERSONAL PROJECTS

Vulkan RayTracing / C++ / Vulkan / Solo May 2022 - current
- Organized Framework to improve performance and maintainability with Vulkan API.
- Implemented full path tracing and explicit light path for accurate and realistic rendering
- Implemented denoising to reduce noise and improve render quality.
- Utilized Vulkan graphics API to create a high-performance raytracing rendering engine.
- Implemented geometry OBJ file loader and PBR for displaying various material

Non-Real-Time Raytracer / C++ / Solo Jan 2021 - Apr 2021
- implemented path-tracer on a very under-featured BRDF lighting model.
- Implemented Reflection and Refraction based on brief scattering
- Applied BVH acceleration structure.

DirectX12 Rendering / C++ / DirectX12 / Solo Sep 2020 - Dec 2020
- Enhanced rendering capabilities using DirectX12 API by implementing a structured framework.
- Implemented IBL and PBR based on Brdf for realistic materials, including refraction and reflection.
- Implemented lighting effects (spot, directional, point), and incorporated Shadow, cube Mapping.

OpenGL Rendering / C++ / OpenGL / Solo Sep 2021 - Dec 2021
- Implemented Spot, directional, and point lights that can also be controlled by UI
- Implemented Phong shading, Phong lighting, and blin shading for different light rendering.
- Implemented Cube mapping for IBL.
- Controlling lights, obj model load changer, recompile shader by UI.

A* pathfinding / C++ / Solo Sep 2022 - Dec 2022
- A* algorithm Combining Dijkstra and Greedy Best-First method based on Given cost and Heuristic cost using Euclidean, Octile, Chebyshev, and Manhattan methods.
- Implemented Rubberband final path and Smooth using a Catmull-Rom spline.
- Implemented AI agent's openness, visibility, search, propagation + normalized occupancy map.

EXPERIENCE

Unit Supply Specialist July 2016 - Apr 2018
Supply Specialist in the Republic of Korea Army
- Supervising and maintaining class 1 & 2 supplies as a Sergeant