HOSEOB JEONG

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SUMMARY

Software Engineer, Graphics Programmer
I am passionate about computer graphics and computer science.
I am good at communication with other people.

EDUCATION

Sept. 2021 to Apr. 2023 — Digipen Institute of Technology
2023 — Bachelor of Science in Computer Science in Real-Time Interactive Simulation

SKILLS

COMPUTER LANGUAGES — C++, C, JavaScript, Lua, Python, GLSL, C#
OTHERS(GRAPHICS API, TOOL..) — OpenGL, Vulkan, UnrealEngine, Unity, Git, ubuntu, VisualStudio, VisualStudioCode, SVN, Xcode, Maya, GameDevelopment, RenderDoc

PROJECTS

Sept. 2022 to Current

Image Processing Demo(Personal Project)
OpenGL Imaging processing(C++,GLSL,GLFW,Imgui, compute shader)
- For fast computing image processing, Implemented compute shaders for processing method.
- Created Bi-linear interpolation and nearest neighbor method for imaging re-scaling.
- Implemented Imaging operation(addition, product, subtraction, negative, Log Transform, Gamma Transform)
- Implemented 2Pass 4,8 connected-CCL(Connected Component labeling) algorithm
- Added Histogram Equalization and histogram matching for adjust contrast adjustment.
- Created Gaussian Blur with N-kernel and the standard deviation, edge detection using the sobel operators.
- Added Unsharp-masking operation using gaussian blur.
- Implemented Discrete Fourier transform(DFT) and Inverse Fourier transform(IDFT)

May 2022 to Current

Vulkan Graphics Engine, 3 members
- Vulkan Graphics Engine(Vulkan api, C++, lua, Entity Component System)
- Implemented vulkan wrapper objects and class.
- Added Physics based Rendering(PBR) with texture mapping and multiple lights(Spot, Point, Dir light)
- Implemented shadow mapping with multiple lights using geometry shader
- Implemented deferred rendering and mipmapping generation in runtime
- Developed Shader include system(#include "shader.glsl" in glsl) for easier to make shader codes
- Created imGUI vulkan texture descriptor pool for drawing texture more friendly in imGUI.

Sept. 2021 to Apr. 2022

OpenGL Graphics Engine(Personal Project)
OpenGL Graphics Engine (C++,GLSL,GLFW,C,Imgui)
- Implemented wrapper OpenGL API classes (buffer,shader, ,..etc) with resource handling(Object Manager, Mesh Manager, Light Manager, and Texture Manager) using STL unordered map. and ".obj" file load
- Implemented Multiple Lights, Reflection, Refraction with Dynamic Cube mapping, and Deferred Shading.
- GUI supported to handle the objects, meshes, lights and shader uniform variables.

Aug. 2021 to Apr. 2022

PinataPanic(GameProject), 13 members
-Unreal Engine 4 -Gameplay programmer/Animation programmer.
-Implemented Pinata character movement, interactive objects, VFX and animation.
-Created Basic AI for chicken enemies, Delivered players more interesting.

Sept. 2020 to June 2021

Q(GameProject), 5 members
- 2D platform Game Custom Engine (ECS) C++ (Physics/Gameplay Programmer)
- Implemented 2D physics, collision components(AABB, Sphere, Ray) and event. Debug Collision Visualization System, and Offset system (for easily handle texture position), Built ray-casing algorithm for AI.
- For increasing Game Frame-rates, Upgrade Spatial partitioning for collision with Quadtree data structure for collision optimization. Improve the O(n^2) to O(klogn)
- Implemented Player-movement state-machine.
- Designed and Built game weapons with Lua script.

Mar. 2020 to June 2020

Slimy Doodly(Game Project), 3 members
- Lead Designer, Gameplay/UI Programmer - 2D platform Game Custom Engine(C++) - Implemented tile-map loader. - Implemented tile interaction logic with player - Created UI/UX Design with window size compatibly. - Designed marketing product design(Poster, Trailer)

AWARDS

Aug. 2021 — Digipen Institute of Technology · **DIT Merit Scholarship**
Academic scholarship (2021~2023)