**EDUCATION**

**Keimyung University -** Daegu, Republic of Korea | 03/2020 -08/2022

*Bachelor of Science in* ***Computer Science***

Relevant Courses: Advanced C/C++, Game Implementation Technique, Computer Graphics, Linear Algebra, Calculus, Data Structures, Geometry

GPA: 4.02 / 4.5

**DigiPen Institute of Technology -** Redmond, WA | 08/2022 -04/2024

*Bachelor of Science in* ***Computer Science in Real-Time Interactive Simulation***

*Minor in* ***Mathematics***

Relevant Courses: Game AI, AI Algorithms, Game Implementation Technique, Computer Graphics, Linear Algebra, Discrete Mathematics, Algorithm Analysis, Physics, Numerical Analysis, Computer Imaging, Deep Learning, Probability and Statistics

GPA: 3.77 / 4.0

Honors: Dean’s List, Magna Cum Laude

**ACADEMIC PROJECTS**

**Graphics Technique Simulators**

*Individual project*

Course: Computer Graphics

Daegu, Republic of Korea | 03/2022 -06/2022

* **Description:** Learned and built a basic graphics simulator with implementing shadow mapping, noise, curves, basic shaders, etc.
* **Technologies:** C++, OpenGL, Dear ImGui, Shadow Mapping, 3D Mathematics

Redmond, WA | 09/2022 - 04/2023

* **Description:** Built a simulator with implementing an object loader, UV mapping, calculating bounding volumes and spatial partitioning, and advanced graphics techniques such as reflections, refractions, lighting techniques, etc.
* **Technologies:** C++, OpenGL, Dear ImGui, EnTT, Assimp, Lighting, Mathematics

**Image Processing Project**

*Individual project*

Course: Computer Imaging

Redmond, WA | 09/2023 - 12/2023

* **Description:** Learned and built a program that allows one to try out basic image processing and image enhancement techniques such as histogram equalization and filtering.
* **Technologies:** C++, OpenGL, Image Enhancement techniques, Image Filtering

**Deep Learning Project**

*Individual project*

Course: Deep Learning

Redmond, WA | 01/2024 - 04/2024

* **Description:** This project aims to understand basic deep learning theories and to implement them such as Image categorization, Image generation using Generative Adversarial Networks, etc.
* **Technologies:** Python, Tensorflow, Keras, Gradient Decent, CNN, GAN, Reinforcement Learning

**Game Projects**

DnDnD at Team Turn-Based Mycelium **-** Redmond, WA | 09/2023 -12/2023

***Graphics Programmer, Shader Programmer, VFX Programmer***

* **Description:** The game is a dark fantasy dungeon crawler with a 3D world and battles in 2D space.
* **Technologies:** C#, Unity, URP
* **Responsibilities:** Implementing VFX for the in-game actions, post-processing using the Universal Rendering Pipeline, and shaders for skyboxes and special objects.

9 To Fright at Team Dinocat **-** Redmond, WA | 09/2022 -04/2023

***Shader Programmer, VFX Programmer***

* **Description:** This game is a 3D shop management game based on the concept of vampires.
* **Technologies:** C++, Unreal Engine 5, Niagara system, UI programming
* **Responsibilities:** Primarily implementing post-processing like item highlighting and x-ray vision shaders, camerawork, and VFX for in-game actions, secondarily implementing tools for map design and UI effects.

Spy The Man at Team Project Morning **-** Daegu, Republic of Korea | 08/2021 -06/2022

***AI Programmer, Engine Programmer, Test manager***

* **Description:** The game is a 2D side-scrolling spy action game with puzzle elements.
* **Technologies:** C++, FSM, Pathfinding, Physics, Engine system programming
* **Responsibilities:** Implementing the engine parts such as the camera, input manager, collision, scene manager, etc. For the game part, designing the NPC’s AI and implementing a pathfinding and dynamic task assignment system for the NPC.

**Game Engine Project**

JJEngine at Team Swimming Bird **-** Redmond, WA | 05/2023 -07/2023

***Game engine and Game editor programmer***

* **Description:** This project is to understand commercial game engines and try to implement an engine and editor.
* **Technologies:** C++, Dear ImGui, YAML, EnTT, Parsing technique using regex
* **Responsibilities:** Implementing preprocessing functions of parsing shaders that will be used in the game to work with our graphics engine, De/Serializer using YAML libraries, Asset Manager, and editor features and systems.

**SKILLS**

**Programming Language & API**: C++, C, OpenGL, ImGui, Python

**Tools**: Visual Studio, VS Code, git, Unreal Engine, Unity

**Skills**:AI Programming, Game Play Programming, Computer Graphics, Image Processing, Game Engine Programming, Machine Learning, Deep Learning