**Junsu Jang**

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**EDUCATION**

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

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

Courses: Advanced C/C++, **Game AI**, **AI Algorithms**, Game Implementation Technique, **Computer Graphics**, Linear Algebra, Calculus, Discrete Mathematics, Geometry, Data Structures, Algorithm Analysis, Data Science Math, Physics, Numerical Analysis, Computer Imaging, Deep Learning, Probability and Statistics

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

*Bachelor of Science in Computer Science*

**EXPERIENCE**

**Republic of Korea Army -** Republic of Korea | 01/2018 -09/2019

*Compulsory military service*

**PROJECTS**

**Game Project**

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

*Graphics Programmer, Shader Programmer, VFX Programmer*

* Implemented **Item highlight and character outline shaders** by using Gaussian Blur, Edge Detection, Vertex Extrusion
* Implemented **X-ray vision shader** by using Stencil, Depth buffers
* Implemented Object navigating UI
* Implemented Whiteboxing tool, Curve tool, and Feedback effects by Niagara system

Spy The Man at Team Project Morning **-** Daegu, Republic of Korea | 09/2021 -06/2022

*AI Programmer, Engine Programmer, Test manager*

* Implemented **AI (Pathfinding, Player detection, NPC Behavior design)**
* Implemented Engine parts (Camera, Game state manager, Input handler, Collision detection)
* Implemented Game systems (**Dynamic Action management system, Head AI system to assign tasks to generic NPCs**)

**Graphics Projects**

Daegu, Republic of Korea | 03/2022 -6/2022, Redmond, WA | 09/2022 -12/2022, Redmond, WA | 01/2023 -04/2023

*Implement Graphics techniques with own Engine*

* Implemented generating basic meshes technique, Toon shading, and fog
* Implemented **Noise and Hermite, Catmull-Rom curves**
* Implemented **Shadow mapping technique**
* Implemented Object Loader
* Implemented Texture mapping with UV (Sphere, Cylinder, Planar, Cube) calculation techniques
* Implemented **Point, Directional, and Spotlight lighting** by using Phong shading and Blinn shading
* Implemented **Reflection and Refraction** by using a Dynamic environment mapping technique
* Implemented Bounding Volumes in multiple ways
* Implemented **Spatial Partitioning techniques** with Octree, BSPtree methods

**Game Engine Project**

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

*Game engine and Game editor programmer*

* Implemented **Shader preprocessing with parsing technique**
* Implemented **Scene De/Serializer with YAML library**
* Implemented Game editor with a File browser, Scene hierarchy, File hierarchy, etc panels
* Implemented Messenger system for Editor Panel Communication
* Implemented Asset Manager for auto load/unload and managing Engine defined Assets

**SKILLS**

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

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

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