Hyeonjoon Nam

Software Engineer

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SKILLS

Languages: C, C++, C#, p5.js, OpenGL, WebGL, GLSL

Engines: Unreal Engine 5, Unity, Custom Engine (Singleton Pattern)

Systems: Gameplay AI, Algorithms, Leadership

Tools : Visual Studio, CMake, Git, Perforce, ImGui

PROJECTS

The Children are Sleeping | C++, Unreal Engine, Perforce 09/2024 – 04/2025

• Led 4 programmers, closely collaborating with Design and Art teams to define clear technical requirements, distribute tasks effectively, and ensure steady progress through structured code reviews and communication.

• Established foundational AI and patrol systems for monsters, addressing playtest feedback about predictable behaviors. Upgraded AI from repetitive static routes to dynamically randomized patrol points, enhancing unpredictability and realism, while eliminating tedious manual waypoint assignments.

• Leveraged profiling tools to identify and resolve significant performance bottlenecks, particularly optimizing lighting systems, resulting in noticeable improvements in frame stability and overall gameplay smoothness.

They Are & Bastion | C++, Visual Studio, Custom Engine, ImGui 09/2023 – 06/2024

• Served as Tech Lead for a five-member tower defense game team, leveraging Asana for task allocation and workflow design.

• Contributed over 80% of gameplay code (pathfinding, UI, mechanics, debugging systems) while resolving conflicts, mentoring team members, and leading bug fixing and polishing efforts to enhance team efficiency and product quality.

• Faced with memory overload from applying A* pathfinding to each monster in a real-time tower defense game, I designed a Singleton-based A* system to share a cached path across all enemies, slashing memory usage and boosting performance.

• Struggling with hardcoded map and enemy data in Suspense Defense, I implemented text file parsing to simplify modifications, cutting debugging time significantly. This approach enabled faster iteration and scalability.

Suspense Defense | C++, Visual Studio, Custom Engine, Doodle Framework 03/2023 – 06/2023

• Served as Tech Lead and organized task distribution and bug tracking using Trello for efficient team coordination.

• To reduce tightly coupled object dependencies and streamline complex interactions, applied the Mediator Design Pattern to centralize collision detection, object spawning/destruction, and state management through a dedicated Mediator class.

• Implemented the **A*** algorithm to enable monsters to perform intelligent pathfinding toward the player, avoiding obstacles on procedurally generated maps, improving enemy behavior over simple linear movement.

• Applied Cellular Automata to generate unique, strategically diverse maps per playthrough, boosting immersion and replayability in a roguelike defense game.

EXPERIENCE

Republic of Korea Army 10/2020 – 04/2022

• Served as support team member and sniper observer in the ROK Army's Special Duty Team and led an eight-member barracks squad as squad leader from August 2021 to January 2022, enhancing leadership, problem-solving, and teamwork skills.

EDUCATION

B.S. in Computer Science Real-Time Interactive Simulation Expected 04/2026

DigiPen Institute of Technology