Hyeonjoon Nam

Software Engineer — Systems & Performance

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SKILLS

Languages: C, C++, C#, Python, GLSL

Engines / Frameworks: Unreal Engine 5, Unity, Custom C++ Engines, OpenGL, WebGL, ImGui

Tools / Platforms: Visual Studio, Git, Perforce, Vercel, GitHub Actions, Trello, Asana

Core Competencies: Systems & Performance Engineering, Architectural Patterns, Gameplay Systems, Collaboration & Leadership

PROJECTS

The Children Are Sleeping | C++, Unreal Engine 5, Perforce 09/2024 – 04/2025
Role: Tech Lead (4-person tech team, 13 total across departments)

- A 3D horror game where the player must escape from a monster by hiding, solving puzzles, managing stamina and sanity.
- Developed a multi-state monster AI with patrol, chase, prediction, and capture behaviors using Unreal's Behavior Tree.
- Designed a Weighted Patrol System improving AI fairness and consistency.
- Integrated a persistency framework to maintain doors, items, and interactable states across level transitions.
- Utilized Unreal Insights to profile runtime performance and improve overall AI consistency, ensuring smoother player experience during complex encounters
- Led the tech team's implementation schedule and cross-department communication with design and art.

Bastion | C++, Custom Engine (OpenGL, ImGui), Visual Studio, Git 03/2024 – 06/2024
Role: Tech Lead (5-person team)

- A top-down defense game where monsters follow a looping path, and players deploy and merge units to win.
- Built a data-driven monster and boss system with state machines and clear visual feedback.
- Expanded the unit system (melee, ranged, area, and buff units) to enhance tactical depth.
- Implemented code refactors and a file-parsing pipeline, improving maintainability and real-time balance tuning.
- Led a technical reboot, redesigning the architecture and reusing core systems efficiently.

They Are | C++, Custom Engine (OpenGL, ImGui), Visual Studio 09/2023 – 12/2023
Role: Tech Lead (5-person team)

- A top-down tower defense action game combining real-time player control and tower management. Players place, upgrade, and remove towers and obstacles while repelling enemy waves.
- Implemented a real-time A* pathfinding system with dynamic obstacle updates.
- Optimized pathfinding by sharing singleton A* computations across all monsters, reducing redundant processing and achieving over 99% performance improvement.
- Built core Tower, Monster, and Wave Systems, and a data-driven parsing pipeline for quick iteration.
- Designed the data-driven architecture to support future scalability and modular feature expansion within the engine.
- Maintained gameplay-side stability and led feature integration within a custom engine.

Suspense Defense | C++, Custom Engine, Visual Studio 03/2023 – 06/2023
Role: Tech Lead (4-person team)

- A 2D top-down action defense and exploration game where players defend their base, explore surrounding areas to gather resources, and defeat distant bosses across day-night cycles and procedurally generated maps.
- Implemented random map generation and A*-based pathfinding for AI movement and replayability.
- Built the Monster system in C++ with state updates and interaction handling.
- Applied a Mediator pattern for efficient object communication under custom engine developmental limits.
- Developed tile-based collision and bounce physics, enabling lightweight wall detection and projectile reflection.
- Directed overall technical structure and resolved system-level issues in real time.

EDUCATION

B.S. in Computer Science Real-Time Interactive Simulation
DigiPen Institute of Technology Expected 04/2026