Hyeonjoon Nam

Software Engineer — Systems & Performance

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About

Software Engineer specializing in systems and performance. Experienced as Tech Lead in multiple team projects (4–13 members), building gameplay systems and optimizing performance in both custom C++ engines and commercial engines like Unreal Engine 5 and Unity. Skilled in profiling, A* pathfinding, and software architecture patterns (Mediator, singleton path manager, state-based merge), with a strong focus on collaboration and cross-department integration.

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, Perforce   09/2024 – 04/2025
- Designed a weighted patrol algorithm to stabilize encounter frequency, avoiding both no-contact and overwhelming encounters.

- Applied Unreal Insights to identify and optimize lighting bottlenecks, improving frame stability.

- Coordinated with Art and Design as Tech Lead for the 4-person tech team, ensuring stable cross-department integration and on-time delivery.

Bastion | C++, Visual Studio, Custom Engine, ImGui   03/2024 – 06/2024
- Refactored fragile merge logic by separating merge rules into data mappings and managing transitions with state-based flow, reducing bugs and simplifying rebalancing.

- Externalized wave, enemy, and unit stats into text file parsing, eliminating hardcoding and improving iteration speed.

They Are | C++, Visual Studio, Custom Engine, ImGui   09/2023 – 12/2023
- Replaced per-frame per-agent A* with a singleton-based path manager, reducing pathfinding cost by 99.9%+ across scenarios (up to tens of thousands of times faster).

- Built wave/map systems and diverse enemy patterns, and managed wave, map, and enemy/unit stats via text file parsing to eliminate hardcoding and significantly improve balancing and debugging speed.

Suspense Defense | C++, Visual Studio, Custom Engine   03/2023 – 06/2023
- Faced with brittle, tightly coupled interactions, applied the Mediator pattern to centralize collision, spawning, and state management, reducing duplication and improving maintainability.

- Implemented procedural maps (cellular automata) and integrated A* pathfinding to enable diverse layouts and smarter enemy behavior without frame instability.

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
DigiPen Institute of Technology   Expected 04/2026