Zhangir Nurmukhambetov

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Profile

Engine and tools programmer with a strong foundation in game technology and real-time systems. Passionate about building custom engines and development tools that enhance workflows. Proficient in C++ with experience in OpenGL, GLSL, and cross-platform development. Curious, detail-oriented, and always exploring new ways to solve technical challenges.

Technical Skills

Languages: C++, C#, GLSL, HLSL, Python
Frameworks & Libraries: OpenGL, EnTT (ECS), ImGui, Cereal, GLM, tinygltf, ImGuizmo
Game Engines: Unreal Engine 5 (Blueprints & C++), Unity (C#), Godot
Developer Tools: Visual Studio, Visual Studio Code, Git, Perforce (P4V), GitHub Actions

Selected Projects

Zentera: Custom C++ Engine Voxel Game (In Development) | *Programming Lead* Apr 2025 – Present

- Serving as Programming Lead for an in-development project, acting as the central point of contact between team members and instructors while overseeing technical direction and planning.
- Coordinating task delegation, monitoring progress, and ensuring cross-disciplinary alignment across design, programming, and voice acting teams.
- Facilitating collaborative workflows and project clarity by maintaining status transparency and prioritizing high-impact tasks in alignment with team objectives.

Fire Ant Engine | *C++, OpenGL, GLSL, EnTT, ImGui, Cereal* Feb 2025 – Apr 2025

- Led development of a custom C++ strategy game engine featuring a terrain editor, prefab system, flow-field AI navigation, and in-engine UI editor.
- Engineered terrain rendering and editing tools, including height and texture manipulation, prop placement, and scene serialization.
- Optimized engine performance to support large maps and numerous units on Windows and Nintendo Switch platforms.
- Collaborated within a team of 7 programmers, utilizing technologies such as OpenGL, GLSL (Compute & Tessellation Shaders), EnTT, ImGui, and Cereal.

Custom Terrain Editor | *C++, OpenGL, GLSL, ImGui, GLM* Nov 2024 – Jan 2025

- Developed a solo research project focusing on editable terrain with various brush tools, serving as the foundation for the Fire Ant Engine.
- Implemented terrain mesh deformation via height maps, dynamic normals, and displacement using vertex shaders.
- Created a fully custom brush framework and normals-based object placement system.

Custom C++ Game Engine | *C++, EnTT, ImGui, Cereal, STB, tinygltf, ImGuizmo* Sep 2024 – Nov 2024

- Designed and implemented core engine functionalities including ECS architecture, particle system, ImGui editor with gizmo tooling, and GLTF runtime loader.
- Developed a resource manager, hierarchy system, cross-platform engine abstractions, JSON serialization, and a tile-based level editor.
- Ensured compatibility and performance across Windows and PlayStation 5 platforms.

IgKnighted | *Unreal Engine 5* May 2024 – Jun 2024

- Contributed to a twin-stick shooter bullet hell game set in a flooded temple, focusing on input mapping, local multiplayer, enemy attack behaviors, and player damage systems.
- Implemented collectables, power-ups, and in-engine animations to enhance gameplay experience.
- Collaborated with a multidisciplinary team of 4 programmers, 3 designers, and 5 artists to deliver a cohesive gaming experience on Windows.

Education

Breda University of Applied Sciences September 2023 – Present
Bachelor of Science in Creative Media and Game Technologies *Breda, Netherlands*