JAGUNMOLU OKE

Simulation & Graphics Programmer

[okejagunmolu@gmail.com] [https://okejagunmolu.wixsite.com/portfolio] [https://www.linkedin.com/in/jagunmolu-oke]

PROFILE

First-class Game Design & Development (Programming) graduate with strong proficiency in C++ and real-time systems & rendering. Experience with GPU programming, shader development, physics simulation, and performance optimisation. Passionate about roles combining rendering, physics, and AI simulations. Published undergraduate research in real-time AI systems.

SKILLS

Language: C++, C#, GLSL, JavaScript.
Graphics & Simulation: Compute Shaders, GPU programming, SSAO, Ray Tracing, BVH accelerations.
Tools: Unity, Unreal Engine, OpenGL API, CMake, Visual Studio, Git, Maya.
Concepts: Multithreading, Optimisation, AI Techniques (FSM, Behaviour Trees, Fuzzy Logic), Mathematical & Physics Modelling.

PROJECT HIGHLIGHTS

Real-Time Mesh Ray Tracer (C++, OpenGL Compute Shader)
Originally built as a 3-day CPU ray tracing challenge (spheres and triangles), later expanded to GPU compute shaders for real-time performance. Integrated BVH acceleration structures using both Spatial Median and Binned SAH. TLAS style ray instancing: world-space TLAS traversal with per-instance-space BVH traversal in model space using shared BLAS.

Skeleton Animation System (C++, OpenGL)
Built a GPU skinning system with multithreading CPU-side animation. Reduced pose computation by 50% and full animation from 31ms to 0.6ms (Release). Includes Bezier keyframe interpolation.

Custom Graphics Framework (C++, OpenGL)
Modular cross-platform rendering framework with logging/assertion systems. Engineering GPU pipeline, shader abstraction and rendering batch system. Integrate real-time diagnostics and tools.

SSAO Implementation (OpenGL, GLSL)
Designed a screen-space ambient occlusion pass as part of a deferred renderer built on a fork version of my Custom Graphics Framework. Tuned sampling kernel and radius dynamically. Implemented blurring and denoising stages for the final composite.

Tactical Squad AI (Unreal Engine, C++)
Research project simulating team-based tactical squad behaviour with spatial analysis and role assignment. Focused spatial positioning & decision making. Published and presented at EVA London 2024.

EDUCATION

BSc (Hons) Game Design and Development (Programming) – First Class Honours
University of Greenwich, United Kingdom.

National Diploma, Mechanical Engineering Technology – Grade: Upper Credit (*2:1*)
Federal Polytechnic Ede, Nigeria.

WORK EXPERIENCE

Visiting Lecturer - University of Herefordshire (2024 – Present)
Delivered modules in Unity, Unreal, and Interactive 3D design. Support students in scripting, shader development, and game development workflows. Focused on bridging technical and creative practices.

Shift Manager - McDonald's, Capital Arch Group (2018 – 2024)
Started as a Crew Member, promoted to Shift Runner/Manager Role. Led operations, trained staff, managed compliance, addressed customer queries and complaints, and performed financial reporting.

INTERESTS

Games Technologies & Development, Real-time simulation, physics, Computer Graphics, Behaviour & AI Technologies, Computational Geometry.

Currently exploring the Vulkan API and working on cloth, hair, and fluid simulation projects as part of developing broader graphics/physics simulation expertise.