Jack Hoggard

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EDUCATION

The University of Texas at Dallas | Richardson, TX   **May 2025**
B.S. in Computer Science | GPA: 3.7 / 4.0

- **Relevant Courses:** Computer Graphics, Machine Learning, Operating Systems, Advanced Data Structures & Algorithms, Software Engineering, Computer Networks, C/C++ Programming in a UNIX Environment, Linear Algebra

EXPERIENCE

Software Engineer   **Divine Gaming Inc.**   **June 2022 - April 2023**
- Spearheaded the development of a cutting-edge video game, improving gameplay efficiency and reducing load times.
- Enhanced non-player character (NPC) behavior by integrating advanced pathfinding algorithms, resulting in a 35% performance boost.
- Reduced resource consumption by 25% through the implementation of asynchronous loading using multithreading and parallel processing.
- Conducted agile sprint planning and participated in cross-functional team meetings to streamline project delivery.

PROJECTS

RayDream
Advanced Ray-Tracing Rendering Engine Java   Java | ImGui | Git

- Engineered a high-performance raytracing engine in Java, enabling realistic image generation with advanced rendering techniques like reflection, refraction, and shadowing.
- Optimized performance with bounding volume hierarchies (BVH) and kd-trees, reducing render times by 50%.
- Created a user-friendly GUI for real-time editing of scene properties and raytracing parameters.

DreamBoard
Interactive Room Planning Website   JavaScript | HTML/CSS | Python

- Built a dynamic web platform enabling users to design rooms by selecting personalized color palettes.
- Integrated multiple APIs to fetch over 10,000 furniture and decor options, ensuring diverse user choices.
- Implemented a responsive and intuitive UI/UX for seamless design and interaction.

Voodoo2D
2D Java Game Engine   Java | OpenGL | Git

- Designed and developed a robust 2D game engine using OpenGL, enabling smooth game rendering and sprite animations.
- Implemented core game engine features, including physics, collision detection, and custom shader support.
- Implemented multithreading, increasing overall engine performance by 40%.

AWARDS

Eagle Scout | Demonstrated leadership, initiative, and project management by completing a community service project of lasting impact.
Dean's List | Recognized for academic excellence, ranking in the top 10% of the School of Computer Science and Engineering over multiple semesters.

TECHNICAL SKILLS

Languages | Java, Python, C, C++, JavaScript, SQL, HTML/CSS
Frameworks & Tools | React, NextJS, OpenGL, Vulkan, GLSL, OpenCL, Qt, ImGui, Git, Docker
Specialized Knowledge | RESTful APIs, Responsive Web Design, Raytracing Algorithms, Physically-Based Rendering, GPU Programming, Multithreading, Procedural Generation, Shader Development