JACKSON SHUMINSKI

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SOFTWARE ENGINEER

Software engineer with years of professional experience developing complex systems in **C#**, **C++**, and **Python** for **research**, **AI**, **game-engine**, **networking**, **digital modeling**, and **real-time simulation** environments. Proven ability to independently design, develop, debug, and optimize complex software while collaborating in an Agile team workflow. Experienced with technical leadership and mentoring, delivering team reports, CI/CD workflows, Git, multithreading, and CPU/GPU programming. Strong math and physics skills that power creative design solutions.

EDUCATION

Rochester Institute of Technology
B.S. & M.S., Game Design and Development

TECHNICAL SKILLS

Languages: C#, C++, Python, HLSL, GLSL, JavaScript, Java
Development: Git, GitHub, Perforce, Jira, CI/CD, Agile, Visual Studio, JetBrains Rider
Technologies: Vulkan, DirectX 11/12, OpenGL, WebGL, OpenCV, Unity, UE5
Core Areas: Simulation systems, linear algebra, algorithms, real-time systems, optimizations, GPU, public speaking
Security Clearance: Secret Level (granted on 8/19/2026)

PROFESSIONAL EXPERIENCE

KEEN SOFTWARE HOUSE: ENGINE DEVELOPER, FLUID SIMULATION

May 2023 – December 2025

- Developed production **C#** and **HLSL** engine systems for the VRage Engine used in *Space Engineers 2*, solving complex math, physics, networking, and performance problems.
- Designed, developed, and was personally responsible for real-time networked **fluid simulation**. Fully designed **incompressible simulation**, highly detailed a **multi-threaded** collision system, “domain” system for attaching fluid simulations to moving objects, and activation system optimization.
- Designed and developed **HLSL** water rendering system using a DDA ray marcher along with a Signed Distance Field to drastically improve performance without sacrificing accuracy.
- Onboarded, mentored, and consulted new team members. Regularly delivered company-wide engineering update presentations.

META REALITY LABS: EYE TRACKING AI RESEARCHER

May 2021 – May 2022

- Developed software pipelines in **Python**, **Blender**, and **OpenCV** to use real-life 3D scans of heads to make a **highly realistic physical model** to generate massive amounts of training data for an eye-tracking AI.
- Created pipeline that processed raw head scans to build the simulated model, inserted an anatomically correct eyeball, and automatically rigged blinkers to blink and wrap around the cornea using linear algebra.
- Developed automation and visualization tools with OpenCV in collaboration with imaging scientists.

FOUNDRY: VR RESEARCHER

May 2022 – February 2023

- Developed a 4-person networked VR experience in collaboration with researchers using **C#**, **Unity**, **Photon**, and **Oculus integration** to test the efficacy of using VR as a teaching medium.
- Designed and implemented multiplayer systems, interactive 3D teaching experiences, and scene management as the sole software developer on the project.
- Conducted 16 controlled user studies and collected test data for research publication.

FEATURED SOFTWARE PROJECT

C++ VULKAN GAME ENGINE

February 2026 – July 2026

- Designed and developed modular game engine in **C++** using **Vulkan**, **GLFW**, and **ImGui**.
- Built **entity-component architecture**, **PBR rendering**, asynchronous texture loading, a **robust post processing system**, GPU particles, an ImGui control panel, and automatic texture resource management.
- Added and integrated Jolt Physics to have **rigid body physics** simulation implemented as a component.
- Created a set of **compute-shader** systems that could simulate tens of thousands of bird-like flocking AI agents in real-time: one that spatially hashed AI agents, and another that simulated them.