

# Ryan Andersen

Long Island, NY

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## PROJECTS

### SIMULATIONFRAMEWORK

November 2021-Ongoing

- Created & maintained an open-source game development framework based on OpenGL
- Wrote an experimental C# CIL to GLSL compiler for writing GPU code with C#

### "SpaceRTS"

April 2024-Ongoing

- A data-driven RTS game prototype, built with SimulationFramework.
- Implemented core systems: deterministic lockstep multiplayer, level serialization, collision bins, fog of war. Includes a custom asset pipeline using blender & python. JSON files drive all gameplay & assets.
- Custom shaders for galaxy background, black hole, stars

### "BLOCKGAME"

September 2024-Ongoing

- Voxel game prototype with spatiotemporal radiance caching: per-pixel path-traced irradiance accumulated in a ring of spatial hashmaps for stable diffuse global illumination.
- Separate per-frame hashmap for multi-bounce reflections.
- Rays traced through 3d texture of 4x4x4 bitmask for speed and memory efficiency.

## EXPERIENCE

### ECRS

June 2025 — Present

Boone, NC (Remote)

#### *Applied Research Intern*

- Developed computer-vision-based self-checkout kiosk.
- Implemented multithreading during inference, yielding a 2.5x speedup on the same hardware.
- Added measurement of drink cup sizes using perspective reprojection techniques.

### Ferrous Design

November 2023 — May 2024

Boone, NC

#### *Junior Developer*

- Developed python scripts and automations for clients.

## EDUCATION

### Suffolk County Community College

Graduating June 2026

#### *Computer Science*

Selden, NY

## SKILLS & INTERESTS

- **Technologies:** C#, C++, Java, Python, HLSL, GLSL, Direct3D 11&12, OpenGL, OpenCV, AWS, LLVM
- **Interests:** Game Development, Graphics Programming, Compilers, Computer Vision