

Ryan Andersen

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PROJECTS

BlockGame

September 2024 — Present

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.

SIMULATIONFRAMEWORK

November 2021 — Present

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 — Present

Designed a data-driven RTS game prototype on a custom engine.

- 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

EXPERIENCE

ECRS

June 2025 — Present

Applied Research Intern

Boone, NC (Remote)

Developed a 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

Junior Developer

Boone, NC

- Developed python scripts and automations for clients.

EDUCATION

Suffolk County Community College

December 2024 — Present

Computer Science

Selden, NY

SKILLS & INTERESTS

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