# Nathan Hutton

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## EDUCATION

**University of Utah** — SLC, UT
*Master of Computer Graphics and Data Visualization — GPA: 4.0* — Dec. 2025

**Westminster University** — SLC, UT
*Bachelor of Computer Science — GPA: 4.0* — May. 2024
- Applied mathematics minor.
- Received the outstanding computer science student of the year award.

**Salt Lake Community College** — SLC, UT
*Associate of Science — GPA: 4.0* — May. 2021
- Earned degree while in high school.

## EXPERIENCE

**Flight Safety International** — Broken Arrow, OK
*Software Engineer Intern* — May. 2025 - Aug. 2025
- Helped integrate Phidgets API with RACKtangle hardware for real-time flight simulation I/O in C++.
- Worked exclusively on Windows & Visual Studio.

**Idaho National Laboratory** — SLC, UT
*Software Engineer Intern* — Feb. 2023 - May. 2024
- Debug and reformat C++, C, and Python code.
- Convert Matlab test harness to Python.
- Configure CI/CD pipelines.
- Implement, refactor, and debug GUIs.
- Worked exclusively on Linux.

**Westminster University** — SLC, UT
*Computer Science Tutor/TA* — Aug. 2022 - Dec. 2023

**Westminster University** — SLC, UT
*IT Technician* — Aug. 2021 - May. 2024

## PROJECTS

- **Boids Flocking Simulation** [**Demo Video**]: OpenGL flocking simulation in C++. A simple ruleset by Craig Reynolds leads to complex flocking behavior. Uses IMGui, color blending in the HSB colorspace, and obstacle avoidance.
- **Solar System** [**Demo Video**]: Solar system simulation with dynamic physics in OpenGL/C++. Utilizes shadow mapping, HDR, environment mapping, verlet numerical integration, bloom, and more.
- **AQI Visualization** [**Demo Video**]: Interactive visualization for Utah's air quality index using Javascript and D3. I made 68% of all commits in this group project.
- **Volume Renderer** [**Demo Video**]: OpenGL/C++ volume renderer with modifiable transfer functions.
- **Squibblets**: 4-person team Unity project using AGILE. I made 54% of all commits and created the main gameplay loop, movement, online leaderboards, audio, AI, UI, menus, and more.
- **Ray Tracer**: Python Ray Tracer made with no reliance on third-party libraries.
- **Minijava Compiler**: Includes type-checking, lexing and parsing with ANTLR4, JVM assembly code generation, AST generation, flow control, package inclusion, and method calls.
- **Java Chatroom**: Terminal based chatroom utilizing java.net. Features include broadcast messages, private messages, user list retrieval, and notifications when users join or leave.

## PROGRAMMING SKILLS

**Languages**: C++, Python, C, Java, C#, Javascript          **Tech**: OpenGL, Linux, Docker, Gitlab CI/CD, D3