

# Nathan Hutton

LinkedIn : <https://www.linkedin.com/in/nathanhutton/>

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GitHub : <https://github.com/Nathan-Hutton>

## EDUCATION

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### University of Utah

*Master of Computer Science*

Salt Lake City, UT

*Aug. 2024 – May. 2026*

### Westminster University

*Bachelor of Computer Science; GPA: 4.0*

Salt Lake City, UT

*Aug. 2021 – May. 2024*

- Applied mathematics minor.
- Received the outstanding computer science student of the year award.

## EXPERIENCE

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### Idaho National Laboratory

*Software Engineer Intern*

Salt Lake City, UT

*Feb 2023 - May 2024*

- Debug and reformat C++, C, and Python code.
- Work with waveform code on Linux.
- Convert Matlab test harness to Python.
- Configure CI/CD pipelines.
- Implement GUIs which interface with a backend.
- Converted documents made in LibreOffice to Latex documents.

### Westminster University

*Computer Science Tutor/TA*

Salt Lake City, UT

*Aug 2022 - Dec 2023*

- Guide computer science students through computer science and algorithms classes.

### Westminster University

*IT Technician*

Salt Lake City, UT

*Aug 2021 - May 2024*

- Help Westminster students and faculty with technical issues over the phone and in person.

## PROJECTS

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- **Solar System**: Simulation of a solar system using OpenGL/C++ with dynamic physics. Includes smooth shading, shadow mapping, texture mapping, model importing, Blinn-Phong Lighting, HDR, skyboxes, second order numerical integration, time/speed manipulation, and optimized bloom. Here's a [demo video](#).
- **Ray Tracer**: Python program replicating the physics of light to create an image. Functionally for smooth shading, triangle meshes, Phong lighting, point and directional lights, shadows, and transformations. Made with minimal reliance on third-party libraries.
- **Squibbles**: 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. Also significantly contributed to code organization and bug fixes.
- **Minijava Compiler**: Compiler created in Java with features such as type-checking, lexing and parsing with ANTLR4, JVM assembly code generation, AST generation, class and block structure (flow control), print statements, 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.
- **Cheap Flight Tracker**: Python app which interfaces with an API to find cheap flights to locations the user specifies. Dynamically updates a spreadsheet with flight info and sends the user a text message.
- **Bitmap Editor**: Bitmap photo editor in C. Functionality includes conversion to grayscale, image reflection, posterization, squashing, mirroring, shrinking, rotation, and skewing.
- **Asteroids**: Recreation of Asteroids in Java. Features include dynamic asteroid creation, splitting asteroids into smaller asteroids when shot, alien ship opponent, movement, and a life system.

## PROGRAMMING SKILLS

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• **Languages**: C++, Python, C, Java, C#, SQL

**Technologies**: OpenGL, Linux, Docker, Gitlab CI/CD