

Sophia Scherer

📍 Woodinville, WA 📧 sophia-scherer 🌐 SophiaScherer

Education

Honors Bachelor of Science in Computer Science | Mathematics Minor
Oregon State University (3.55 GPA)

Graduation: June 2027
Corvallis, OR

Relevant Coursework

- Analysis of Algorithms
 - Scientific Visualization
 - Parallel Programming
 - Linear Algebra II
 - Software Engineering II
 - Data Structures
 - Computer Graphics
 - Computer Arch. & ASM
 - Operating Systems I
 - Computer Networks
 - Discrete Mathematics
 - Introduction to Security
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Skills

Programming Languages: C++, C, Java, JavaScript, HTML, CSS

Frameworks & Libraries: React, MongoDB, Express

Technologies & Tools: Git, OpenMP, SIMD, CUDA, OpenCL, CMake, Make

Soft Skills: Communication, Teamwork, Leadership, Detail Oriented, Strong Work-Ethic.

Personal Projects

2D Vector Field Visualization System

November 2025

- Built an interactive **OpenGL** system for visualizing **2D vector** and **scalar fields** from simulation data
- Implemented real-time **GLSL Line Integral Convolution (LIC)** and streamline tracing using Euler integration
- Designed custom shader programs and **procedural geometry** for color mapping, contours, and wireframe/point-cloud modes

High-Performance Parallel Computing Applications

Spring 2025

- Implemented and benchmarked **parallel algorithms** including Monte Carlo simulations, numeric integration, and array operations
- Analyzed performance characteristics across **multicore CPU (OpenMP)**, **SIMD vectorization**, **GPU computing (CUDA)**, and **distributed systems (MPI)**
- Conducted systematic performance analysis demonstrating speedup factors and identifying bottlenecks in parallel architectures

Full-Stack Exercise Tracking Application

March 2025

- Designed and developed a **web application** for personal fitness tracking with **RESTful API** backend
 - Built responsive **single-page** application with **React** for dynamic user interactions
 - Implemented **MongoDB database** schema optimized for time-series workout data
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Experience

Student Trainer — *UHDS, Oregon State University*

September 2023 - Present

- Trained new student workers, ensuring compliance with food safety standards and maintaining service quality

Treasurer and Vice Chief — *Order of the Arrow, Boy Scouts of America*

February 2023 – January 2025

- Led teams and coordinated events for 400+ participants, managing budgets and logistics.
- Attended the National Leadership Seminar, further refining leadership and communication skills.

Shift Lead — *Freshii*

January 2023 - June 2023

- Managed staff and shift operations, streamlining workflows and ensuring high customer satisfaction.