

# Vaughn Zaayer

Walnut Creek, CA | [vaughnzaayer@gmail.com](mailto:vaughnzaayer@gmail.com) | +1-925-330-1150 | [linkedin](#) | [github](#)

Inquisitive Reed College mathematics graduate with broad experience in both theoretical and applied math and computer science. Leverages strong analytical reasoning to develop effective practical software solutions for real-world use. Keen interest in computational geometry, rendering, and graphics technologies.

## Education

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**Reed College**, Bachelor of Arts in Mathematics, Minor in Computer Science Aug. 2021 – May 2026

**Relevant Coursework:** Real Analysis, Algorithms and Data Structures, Abstract Algebra, Computer Systems, Software Engineering, Cryptography, Linear Algebra, Vector Calculus, Private and Fair Data Analysis, Deep Learning, Parallelism and Concurrency.

## Relevant Experience

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**Reed College Senior Thesis** | [🔗](#) Sep. 2025 – May 2026

*Keeping the Curves: Guiding Mesh Simplification with the Gauss–Bonnet Theorem* Portland, OR

- Conducting year-long independent research in computational geometry, implementing mesh simplification algorithms, formalizing complex properties in discrete geometry, and translating abstract mathematical concepts into practical computational applications.
- Presented and defended a 40-page thesis to faculty demonstrating proofs, implementation details, and outcomes.

**Computer Science & Technology Association at Reed (CSTAR)** Aug. 2021 – Jan. 2025

*Vice President* Portland, OR

- Led a team in planning and executing workshops, networking events, and professional development initiatives to promote skill-sharing and community engagement in the Computer Science Department.
- Strengthened student-faculty relationships and mentorship opportunities, enhancing collaboration and departmental outreach.

**Lindamood-Bell Learning Processes** May 2024 – Aug. 2024

*Education Clinician* Walnut Creek, CA

- Delivered individualized instruction and developed tailored learning strategies, improving reading and writing outcomes for students with diverse needs.
- Authored detailed progress reports contributing to Stanford research on alternative learning methods and neurological development, supporting academic growth and confidence.

**Agile Displays** May 2023 – Aug. 2023

*Quality Assurance Consultant* San Jose, CA

- Developed and executed comprehensive testing plans, producing reproducible bug reports and ensuring software and hardware reliability.
- Collaborated with development teams to track and resolve complex bugs, optimizing products before release.

**Introduction to Computer Science (CSCI121), Professor Jim Fix** Aug. 2022 – Dec. 2022

*Teacher's Assistant* Portland, OR

- Supported students in mastering programming fundamentals, algorithms, and data structures through individualized guidance and group instruction, providing constructive feedback on assignments and exams.
- Collaborated with the professor on lesson planning, syllabus design, and project development to improve course structure and student engagement.

## Projects

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**Curvature Computation on the GPU** – CUDA, HIP, C++ 2026 | [🔗](#)

- Computes the Gaussian curvature of each vertex on a mesh in parallel using a GPU
- Can compile to NVIDIA and AMD GPUs

**Mesh Classification using Intrinsically Coarsened Meshes** – PyTorch, Computational Geometry 2026 | [🔗](#)

- Uses the Intrinsic Curvature Error coarsening algorithm from Liu et al. to coarsen a mesh dataset
- Trains on the vertex curvature values of each mesh to classify them

## Skills

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**Languages:** C/C++, Python, Rust, Go, CUDA, HIP, Swift, MIPS Assembly, R, MATLAB, Java, JavaScript

**Tools:** Postman, Vim/NeoVim, JetBrains Suite, Git/GitHub, Linux, LATEX, gdb/lldb, Google Suite, Microsoft-Suite, R Studio