

Isabella Harker

Github: <https://github.com/izzyharker>

LinkedIn: <https://www.linkedin.com/in/isabella-harker/>

Education

University of Oregon, Eugene, OR – *Bachelor of Science; Computer Science & Mathematics**

Robert D. Clark Honors College, Eugene, OR*

South Eugene High School, Eugene, OR – *High School Diploma*

* = *In progress*

Work Experience

- **Research Assistant, Guldberg Lab (Knight Campus)** August 2023 - present
Worked with a team to design software to format and analyze data using a variety of tools, including pandas and R. Created efficient and accurate workflow for image processing and AI modeling using a variety of software tools.
- **Student Support Tech, USS Academic South** June 2023 - Sept 2023
Resolved technology issues of all sorts quickly and efficiently, curated an organized and efficient library environment to meet the needs of students.
- **Paper Marker, University of Oregon** Fall 2022 - Spring 2023
Provided prompt and accurate feedback to students in several math classes, communicated with the instructor and with students to answer questions and clarify expectations.

Projects

- **Visualization of 3D Surfaces:** Created a series of videos demonstrating the relationship between cubic surfaces and certain sets of planes. Used MATLAB to perform calculations and render the final video. (~150 lines of code)
- **Scanline Rasterization:** Built a rasterization program in C to render 3D objects, and implemented camera matrix transforms, a scanline algorithm, and a z-buffer. Developed over the course of 5 weeks during a class on graphics.
- **Ray Tracer:** Implemented a ray tracer in CUDA to render 3D objects, including the ability to render triangles, rectangles, and spheres, and an implementation of light and shadow rays. Used to produce a video of light refracting through a rotating glass pyramid. Final project for a graphics class.

Skills

- C/C++, Python, MATLAB, JavaScript, CUDA
- Git/Version Control, pandas, tensorflow
- Communication & organization

Awards/Recognition

- UO General Scholarship, UO Summit Scholarship, Mercer Scholarship, Charles W. and Elizabeth H. Curtis Scholarship in Mathematics, Geoffery Eric Wright Outstanding Junior Award, Henry V. Howe Scholarship

Other

- **D1 Ultimate Frisbee**
Third-year playing in D1 college sports, communicate effectively both on the field and off the field, am always punctual and organized to help the team work as a cohesive unit.

Relevant Coursework:

- **Math:** Linear Algebra, Cryptography, Machine Learning, Data Science, Networks & Combinatorics
- **Computer Science:** Operating Systems, Introduction to Graphics, Programming Languages, Computer Organization