Allison J. O'Brien

ajobrien42@outlook.com | (303) 717-1824 | allisonjobrien.com | Denver, CO (willing to relocate)

Technical Tools and Skills

Computer Languages and Software: Python, C, C#, C++, SQL, MySQL, Django, Git, Linux, HTML, CSS, JS, WebGL/OpenGL, Three.js, React, Node.js, Java, MATLAB, Visual Studio, VS Code, Maya, Unity, Blender, Photoshop, Illustrator, Sketchbook, Substance Painter, DaVinci Resolve, Fusion, USD

Language: Proficient French

Technical Experience

Teaching Assistant, Fall 2023 — UNIVERSITY OF NOTRE DAME, Notre Dame, IN

- Provided technical guidance for 60 students enrolled in "Technical Concepts of Visual Effects," covering 3D modeling, animation, and scripting in Maya, Substance Painter, and DaVinci Resolve.

Undergraduate Researcher, Summer 2023 — UNIVERSITY OF NOTRE DAME, Notre Dame, IN

- Studied the performance of minor embedding algorithms to map problem graphs with specific characteristics onto quantum machine hardware. Produced original data and analysis.

Software Engineer Intern, Spring 2023 — DUALITY ROBOTICS, San Mateo, CA

- Integrated Simulink into Falcon, Duality's digital twin simulator, to enable high-fidelity physics simulations. Demonstrated a working integration via a rocket launch simulation.

Software Engineer Intern, Summer 2022 — VORNE INDUSTRIES, Itasca, IL

- Designed and implemented a new Spark Dimension component using Storybook, React, and HTML/CSS. Demonstrated completed component to a large group of stakeholders.

Education and Advanced Course Projects

UNIVERSITY OF NOTRE DAME – Notre Dame, IN – May 2024 – cum laude (GPA: 3.88/4.00)

B.S. in Computer Science, Concentration in Media Computing, Minor in French and Francophone Studies

Interactive Snow Globe Web Application – Computer Graphics, Notre Dame – Fall 2023

- Created an interactive snow globe in Three.js, based on WebGL/OpenGL, featuring a season cycle, lighting, texturing, particle effects, and user controls for viewing and modifying the model.

File System Implementation – Operating Systems, Notre Dame – Spring 2023

- Independently implemented a simplified version of the Unix file system in C. Supported operations to format and mount the file system, create and delete inodes, and read and write to a disk image.

Non-Profit Database and Dashboard – Database Concepts, Notre Dame – Fall 2022

- Created a database and web application to streamline food inventory tracking for Cultivate Food Rescue, a non-profit organization. Designed a visually compelling dashboard to present key metrics to donors and volunteers. Wrote SQL queries to connect the dashboard to the database.

Job Board – Programming Paradigms, Notre Dame – Fall 2022

- Created a job board web application using Python and Django which supported authenticated sessions for recruiter and candidate roles. Handled full stack development on a team of three.

Activities

Notre Dame Symphony Orchestra – Fall 2021 - Spring 2024

Band of the Fighting Irish, CORE Band leader – Fall 2020 - Spring 2024