Allison J. O'Brien

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

Technical Tools and Skills

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

Language: Proficient French

Education and Technical Experience

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

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

Teaching Assistant, UNIVERSITY OF NOTRE DAME, Notre Dame, IN *Aug 2023 – Dec 2023*

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

Undergraduate Researcher, UNIVERSITY OF NOTRE DAME, Notre Dame, IN *May 2023 – July 2023*

- Studied the performance of minor embedding algorithms under Dr. Peter Kogge. Mapped problem graphs with diverse characteristics onto quantum machine hardware. Produced original data and analysis included in a paper presented at the QCE24 conference.

Software Engineer Intern, DUALITY ROBOTICS, San Mateo, CA *Jan 2023 – May 2023*

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

Software Engineer Intern, VORNE INDUSTRIES, Itasca, IL *May 2022 – June 2022*

- Designed and implemented a new Spark Dimension component using Agile software development, Storybook, React, and JS/HTML/CSS. Demonstrated completed component to stakeholders.

Advanced Course Projects

Interactive Snow Globe Web Application – Computer Graphics, Notre Dame *Nov 2023 – Dec 2023*

- Led a team of four to create an interactive snow globe with Three.js, based on WebGL/OpenGL, featuring a season cycle, lighting, texturing, particle effects, music, and user controls.

File System Implementation – Operating Systems, Notre Dame *Apr 2023 – May 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 *Nov 2022 – Dec 2022*

- Created a database and web application with a team of three to streamline food inventory tracking for Cultivate Food Rescue. 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 *Nov 2022 – Dec 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 *Oct 2021 – May 2024*

Band of the Fighting Irish, CORE Band leader *Aug 2020 – May 2024*