Max Ortner

Computer Science, Physics, and Mathematics

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Work Experience

Post Baccalaureate Researcher June 2023 - Present
Los Alamos National Lab

- Work in an interdisciplinary environment on software which meets the needs of different applications
- Develop a framework for HPC use that leverages MPI I/O called Parallel I/O
- Collaborate on the open-source physics simulation software FleCSI

Certified Restaurant Supervisor May 2021 - Aug 2022
Red Lobster

- Reinforced positive work environment and upheld core values for myself and my coworkers.
- Prioritized customer care as well as maintained fair opportunities for coworkers.
- Worked with managers and held responsibility in technical restaurant operations.

Education

Belmont University Graduated Dec. 2023
Bachelor of Science in Mathematics and Physics

- GPA: 3.75/4.0
- Extracurricular: Award for undergraduate research and president of physics club

Notable Projects

Parallel I/O pio.maxortner.com
Developed at LANL

This is a software I develop at the Los Alamos National Laboratory. At the moment, it is a simple C++ wrapper for writing NetCDF files utilizing MPI I/O and the parallel read/write functionality that provides. It is also the beginning of a wrapper for writing ExodusII files (built on top of NetCDF) in parallel, which is a functionality not offered in it's current form.

Simple Graphics and Audio Library GitHub Page
Personal Project in 2020

A partially complete C++ graphics engine with an OpenGL backend. I was inspired by the versatility of 2D renderers like SFML, but was frustrated with how out of date the graphics backend is and also the lack of similar APIs for 3D graphics. So, I sought a way to make a lightweight and performant interface for 3D graphics.

Technical Skills

- Physics: *Currently not specialized, but have interest and ability in General Relativity and Quantum Field Theory, primarily for theory*
- Math: *Differential geometry, group theory, and tensor calculus*
- Computer Science: *Graphics systems, low-level performant software, and distributed computing*