# COLIN M. LUANGRATH

## COMPUTER SCIENCE AND PSYCHOLOGY UNDERGRADUATE

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## SUMMARY

Motivated Computer Science and Psychology student at the University of Wisconsin-Madison with hands-on experience with Python, Java, HPC, ML, HTML/CSS, Ruby on Rails, C/C++, and 3D modeling with Blender. Seeking an internship to apply strong problem-solving skills and research experience in a collaborative team environment.

## PROFESSIONAL EXPERIENCE

**Technical Research Aide, Argonne National Laboratory**                **Summer 2024, 2025**

- Conducted benchmarking and performance analysis for Deep Learning I/O (DLIO) on the Polaris supercomputer, improving understanding of AI workload scaling
- Optimized the performance of DLIO for submission to MLPerf, focusing on reducing I/O bottlenecks
- Applied Lustre file striping to boost I/O throughput, resulting in an increase of over 15%
- Developed and executed Python scripts for data analysis, utilizing MatPlotLib to create visualizations that informed key project decisions
- Acquired hands-on experience in high-performance computing (HPC) environments, including managing virtual environments and executing large-scale parallel jobs
- Presented a research poster to Argonne's directorate, summarizing key findings and the impact of workload profiling and optimization on ML performance
- Presented findings to project team and Data Science and Learning (DSL) division weekly
- Collaborated with researchers, gaining exposure to cutting-edge advancements in HPC and AI research
- Worked independently on ITT project while updating mentors regularly in meetings and standup
- Developed a lightweight performance tracer in C++ for Intel ITT APIs for low-overhead analysis on Aurora reducing time per trace by over 28,000 µs
- Streamlined development by creating CI/CD pipelines with GitHub Actions

**Field Intern, Casten for Congress**                **Jun - Nov 2020, 2022**

- Entered and audited over 400 updates into Mobilize to ensure accurate voter data
- Canvassed in-person throughout the Chicagoland area, building relationships with voters
- Created efficient routes for 30+ sign delivery volunteers using Excel and mapping software

## EDUCATION

**University of Wisconsin - Madison**                **Aug 2023 - May 2027**

B.S. Computer Science, B.S. Psychology, Certificates in Data Science and Game Design

- Mercile J. Lee Scholarship recipient (4 year, full tuition)
- Extracurricular activities: Wisconsin AI Safety Initiative, Minerva Game Studio (UI Dev), Software Development Club, Chess Club, Google Developer Student Club, SEASA, LCSA, JSA
- Relevant coursework: Applied Statistics for Engineers, Computer Engineering, Artificial Intelligence, Machine Organization and Programming, Algorithms, Operating Systems, Programming Languages & Compilers, Computer Architecture

**Glenbard South High School**                **Aug 2019 - May 2023**
**Certifications:** COSS Text Mining & GPU Programming                **Jun 2024**

## SKILLS & INTERESTS

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| Python | GitHub | AI Safety | Cooking | Psychology |
| C/C++ | HPC | UI/UX Development | Chess | Philosophy |
| Java | Machine Learning | Shell | Bouldering | Reading |