# Jerry Mann

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## Education

**Purdue University** West Lafayette, IN
*Bachelor of Science In Honors Computer Science, Mathematics/Statistics - 3.72 GPA* *Expected: May 2025*
**Relevant Coursework:** *Computer Graphics, Computer Networks, Operating Systems*

## Experience

**Software Engineering Intern** May 2024 – Present
*Phase3D* *Chicago, IL*

- Develop and maintain Computer Vision software for real-time detection of build anomalies during metal additive manufacturing (3D-printing) and correlate those anomalies to defects in the resulting part
- Improved CI/CD processes by implementing automated testing, configuring parallel job execution, and integrating static code analysis tools, resulting in faster deployments and enhanced code quality metrics
- Implemented comprehensive unit testing and static type checking across the Python codebase, uncovering and resolving numerous existing errors
- Collaborated in Scrum framework, driving product backlog refinement and contributing insights during sprint planning and retrospectives
- Contributed to software deployment for high-profile clients including NASA, GE, and the US Air Force

**Computer Architecture TA** August 2023 – May 2024
*Purdue University* *West Lafayette, IN*

- Lead weekly lab sessions for groups of 30 students, delivering comprehensive instruction on course materials, breadboard circuitry, and code optimization in C and Assembly
- Develop skeleton code templates for assignments and create official solution code, benefiting 500+ students

**Undergraduate Research Assistant** August 2022 – May 2023
*Sandia National Laboratories* *West Lafayette, IN*

- Led the analysis of flight data, working closely with a cross-functional team to develop algorithms within a two-week sprint cycle
- Devised and implemented advanced data cleaning and classification algorithms to eliminate inaccurate data points and group flights based on shared features
- Attained a 90% success rate by building robust code to predict flight trajectories as segments or whole flights, along with identifying trajectory segments belonging to the same flight

**IT Operations Specialist** July 2022 – May 2023
*Information Technology at Purdue* *West Lafayette, IN*

- Enhanced security measures by updating two-step authentication software and automating password resets
- Optimized technical documentation for software products, improving user satisfaction and reducing support inquiries by writing user-friendly manuals and streamlined documentation processes

## Projects

**J* Programming Language** | *C++, LLVM, CMake* April 2024 – Present

- A novel programming inspired by a blend between Python's syntax and Rust's type system and safety features, enabling rapid development while encouraging best practices
- Designed a strong type system incorporating side effect annotations, enabling compile-time effect tracking and enhanced code safety

**File Compression Software** | *Rust, Cargo, Git* November 2022 - December 2022

- Developed software that compresses images and plain text files based on Huffman Compression and Deflate, achieving file size reductions inversely proportional to Shannon entropy
- Created a robust decompression algorithm to restore compressed binary files to their original forms, ensuring seamless file recovery and usability

## Skills & Interests

**Languages**: C, C++, Rust, Haskell, Python, Go, Java, R, Bash, LaTeX
**Developer Tools**: Git, Docker, CMake, Cargo, LLVM, AWS
**Interests**: Chess, Redstone Wiring, Simulations, Rock Climbing, Hiking