

Noah Trupin

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EDUCATION

Purdue University

Bachelor of Science in Computer Science; GPA: 4.0/4.0

West Lafayette, IN

August 2023 – May 2027

Relevant Coursework: Programming in C, Foundations of Computer Science, Object-Oriented Programming

The Lawrenceville School

High School Diploma

Lawrenceville, NJ

August 2019 – May 2023

EXPERIENCE

Undergraduate Research Assistant

Purdue University Yang Group

October 2023 – March 2024

West Lafayette, IN

- Conducted research on scalable parallelization of the least-squares QR factorization algorithm in Fortran for solving linear systems involving large sparse matrices in seismic tomography under Professor Xiaotao Yang.
- Utilized OpenMP and OpenMPI for parallelization, message-passing, and multi-threading of the algorithm on distributed compute nodes.

Lead Member of Technical Staff

Straato

April 2023 – November 2023

Ithaca, NY

- Inaugural member of Straato, a software startup building an experimental digital currency and marketplace.
- Designed and implemented marketplace backend, including user onboarding and transactions, on top of an AWS (EC2, S3, Cognito, Lambda, etc) and MySQL stack in Python and ReactJS.
- Developed landing, signup, and login pages using React.js and Tailwind.css.
- Facilitated partnership with Cornell Blackstone Launchpad, gaining financial and mentorship support.

High School Research Assistant

The Lawrenceville School Sentinel Group

February 2023 – May 2023

Lawrenceville, NJ

- Developed a full-stack framework and API for physics students to build interactive web simulations with p5.js.
- Utilized iFrame and Node.js sandboxing and message-passing techniques to provide security and fault tolerance.
- Created interactive orbital and raytracing simulations on self-built physics engines as proofs-of-concept.

Honors Computer Programming Teaching Assistant

The Lawrenceville School

September 2021 – May 2022

Lawrenceville, NJ

- Guided students through learning the Wolfram Language, Mathematica, and foundations of technical computing.
- Led follow-along lessons in simulations, distributed systems, user interfaces, and mathematical programming.

POSTERS & PRESENTATIONS

N. Trupin, X. Yang. [A Parallel Conjugate Gradient Routine for Non-Square Matrices](#). February 2024

W. Phillips, **N. Trupin**, S. Laubach. [Paradigm for Future Analysis of Shipetaukin Creek Water Quality](#), Winter 2022 Lawrenceville Poster Night. May 2022

PROJECTS

Hexdump Utility: Command-line hexdump featuring colored output, buffering, and side-by-side text written in C.

Lambda Calculus: Compilers and interpreters for the lambda calculus in Rust, Go, Mathematica, and JavaScript.

Personal Website: Full-stack Flask/PostgreSQL app where I edit and display my projects, writing, and info.

Neovim Config: Lua-based config with LSP/autocomplete support, custom UI, fuzzy-finding, and file handling.

Lore Browser iOS App: iOS app to search/read Destiny 2 lore by scraping the Ishtar website, written in Swift.

Java Classfile Debugger: JVM Classfile decompiler and analysis tool written in C.

Tutor Matching System: GSuite-integrated website to match students with tutors at Lawrenceville.

TECHNICAL SKILLS

Proficient Languages: C, Python, Java, SQL, Swift, Ruby, JavaScript, R, Fortran, Mathematica, Lua

Developer Tools: Git, Docker, AWS, Google Cloud, Jupyter, Linux, Bash

Frameworks & Libraries: MLX, NumPy, Matplotlib, Pandas, OpenMP, OpenMPI, React, Flask