

Education

Worcester Polytechnic Institute | BS in Computer Science | GPA 3.89 (Fall 2024 - Spring 2028)

- **Research** (Spring 2024 - Current)
 - Summer '25: Participated in an [Undergraduate Research Program](#), wrote a paper on Causal Inference with LLM Agents. **Paper accepted at [MIT Undergraduate Research Technology Conference 2025](#)**
 - Working on causal reasoning and natural language processing (NLP) under Prof. Raha Moraffah
 - Fine tuned LLMs, made a website, made LLM benchmark suite
- **Software Development Work-Study @ Academic/Research Computing (ARC)** (Fall 2024 - Current)
 - Created a LLM chatbot to answer student queries about course material on a learning platform, Canvas. **RAG, SQL, Flask, Python, Apache**
 - Created Regi, a registration system for training sessions offered by ARC. **SQL, Javascript, Go**
- **Courses:** Program Design, Operating Systems, Discrete Math, Linear Algebra, Differential Equations, Probability, Calculus 4, Stats, 3D Modeling
- **Extracurricular:** Varsity Men's Rowing (Fall 2024 - Current)

Internships

- Intern Cyber Security Researcher @ Peraton Labs (Summer 2026)
 - AI/Machine Learning/Computer Vision, Reverse Engineering, Data Intake Pipelines, Git, Linux
- Intern Software Engineer @ Ethereum Matter (Summer 2023 - Summer 2024)
 - Virtual Reality Game Design & Programming, Motion Capture, 3D Model Rigging & Animation

Personal Projects

Tensor Graphs Skills: Compilers, AI, CUDA, C++

- An inference engine/compiler written in C++. Runs LLMs & image diffusion models quickly on heterogenous systems. Can optimize any computational task that can be expressed as a directed acyclic graph.

Federated Learning Skills: Socket networking, Distributed computing, Numpy

- Developed a set of python programs which train a Recurrent Neural Network (RNN) on a distributed network of computers using evolution strategies. The trained model generates sonnets in the style of Shakespeare.

Camera-Based Fingertip Tracker Skills: PyTorch, C++, Data Processing

- Trained a set of Computer Vision AI models used together in a program to let me draw & write notes on my computer using only the camera to track my hands. Developed a custom data collection & labeling pipeline to ensure high quality data.

C++ Projects

- 2D Eulerian Fluid Simulation ; Boids Simulation ; Custom 3D Physics & Render Engine ; 3D fractal renderer using ray-marching ; Image to Painting converter, recreates images using only bezier curves

Python Projects

- Training neural networks via reinforcement learning to play various games (Snake, Elden Ring, Overwatch)
- Lossless image compression using deep neural networks and arithmetic coding for archival of large image galleries

Technical Skills & Knowledge

- Python, C++, Javascript, Go, Java, SQL, C#, Flask, PyTorch, Numpy, Pandas, OpenCV
- LLMs, Agentic LLM Systems, GRPO/DPO, Reinforcement Learning, High Performance Computing, Retrieval Augmented Generation (RAG)