

Patrick Brophy

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EDUCATION

UNIVERSITY OF WISCONSIN-MADISON

Bachelor of Science

Major in Computer Science

Cumulative GPA: 3.5/4.0; Dean's List Fall 2022

Relevant Coursework: Discrete Mathematics, Machine Organization, Neural Networks

Madison, WI

Expected May 2025

UNIVERSITY OF CINCINNATI

Bachelor of Science

Cumulative GPA: 3.5/4.0; Dean's List Fall 2022

Transferred at the end of academic year to University of Wisconsin-Madison

Cincinnati, OH

Aug 2021 – May 2022

WORK EXPERIENCE

UNIVERSITY OF CINCINNATI

Research Assistant

- Improved scalability of electromagnetic side channel attacks
- Used deep learning to increase accuracy of side channel attacks
- Leveraged Chip Whisperer tool suite to perform analysis and research

Cincinnati, Ohio

Jan 2022 – Apr 2022

Code Ninjas

Lead Instructor

- Created new curriculum to accommodate for COVID-19 protocols and time constraints
- Taught 100+ K-12 students coding in Python and Lua through games such as Minecraft and Roblox
- Achieved 5-star rankings for quality of instruction

Cleveland, Ohio

May 2019 – Aug 2021

UNIVERSITY PROJECTS

PERSONAL SEARCH ENGINE | Python with PyTorch & Rust with Tauri

Jun 2023 - Present

- Created application to store articles, notes, and documents in a personal knowledge database
- Utilized LLMs to create text embeddings to store documents based on textual semantics
- Fine-tuned chat models to create an interactive experience and tutor

LISP INTERPRETER | Rust

Jun 2022

- Utilized lexical analysis to create a parser for custom Lisp language
- Created a REPL for testing and program development
- Programmed in Rust to learn more about the language features and structure.

CAPTCHA SOLVER | Node.JS with Express & Python with PyTorch

Dec 2021

- Created application using web scraping, deep learning, and caching that allows users to easily solve captchas provided by hCaptcha.com
- Utilized pre-trained models for fine-tuning on custom data that allowed for generalizability across captchas
- Worked with a small team of developers to improve the speed of deployment and innovation

ACTIVITIES

Kappa Eta Kappa

Treasurer

- Managed funds, dues, and rent for the organization
- Streamlined treasurer processes through automation processes

Madison, WI

May 2022 – Present

UC Running Club

Member

Cincinnati, OH

Aug 2021 – May 2022

ADDITIONAL

Technical Skills: Python, HTML/CSS, JavaScript, Typescript, Go, Rust, C++, SQL, MongoDB, AWS, Firebase