Cam Mazzacane

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Education

Cornell University, Ithaca, NY May 2028

Bachelor of Arts, Intended Majors in Computer Science and Mathematics

Relevant Coursework: Honors Object Oriented Programming; Theoretical (Proof-based) Linear Algebra and Calculus

Experience

AI Development Intern, University of Rochester Laboratory for Laser Energetics July 2023 – Aug 2024

- Developed secure question-answering (LLM) software for searching facility documentation with 91% response accuracy by implementing few-shot prompting on GPTs using Python (PyTorch, LangChain)
- Integrated retrieval-augmented generation using ETL data pipeline, transforming 45,000+ documents stored in Oracle MySQL database into vector embeddings (ChromaDB) using bash
- Built LLM performance evaluation and visualization tooling in Python (Matplotlib), leading to 100% citation accuracy and discovering a 90% more efficient model for client-side processing of prompts with secure information

Projects and Extracurriculars

Crescendo2024 Autonomous Code | *Java* github.com/pittsfordrobotics/Crescendo2024

- Programmed automatically-aiming projectile shooter for competition robotics with 95% scoring rate, controlling 3DOF shooter including open and closed-loop (PID) control through linear interpolation of localization data
- Designed state machine-based control system for autonomous decision-making, implementing fiducial-based (AprilTag) localization system and spline path optimizer with global-shutter cameras, IMU, and drivetrain telemetry, placing top 20% in autonomous scoring at FIRST Robotics World Championship
- Implemented system identification on holonomic drivetrain, decreasing driver input delay by 250ms
- Placed first out of 51 teams at regional competition, team's first qualification for FIRST Robotics World Championship

Teaching Assistant, Cornell Cybersecurity Club Sept 2024 – Present

- Present in weekly workshops teaching 50+ new club members fundamentals of Linux and binary exploitation in C
- Organize Cornell's first ever participation in CNY Hackathon and National Cyber League

Teaching Assistant, Syracuse University Summer College Online: Cybersecurity July 2021 – July 2023

- Developed exercises on Kali Linux VMs for a three-week summer cybersecurity course for high school students
- Organized and red-teamed a four-hour cybersecurity competition, developing threats to simulate network vulnerabilities for Windows 10 and Windows Server environments

Skills

Programming Languages: Java, Python, SQL, bash

Technologies: Git, MySQL, JUnit, PyTorch, Gradle, Docker, VisualVM, Wireshark, GDB, LaTeX

Awards

National Cyber League Individual Game, **Top 30 of 8,000** Oct 2023

Carnegie Mellon University PicoCTF, **Top 250 of 8,000** Mar 2022

MetaCTF CyberGames, **Top 10%** Dec 2021