Jack Hogan

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Double major in Computer Science and Artificial Intelligence with extensive experience in software engineering, AI/ML, and leadership roles in tech organizations. Has worked with a wide variety of machine learning models and frameworks.

Experience

Era Computer
Fellow
September 2025 — Present San Fransisco, CA/Remote

- Creating Beacons, a hardware/software solution for fostering social connections at events
- Implementing complex techniques including RF design, high-frequency signal management, and constrained environment development
- Designing a cohesive software stack for registering, finding, and collaborating with Beacons using traditional and LLM-based machine learning techniques

Peraton Labs
Machine Learning Researcher
May 2025 — Present Silver Spring, MD

- Created a new pipeline for concurrently testing different GNN architctures, speeding up testing by 2-3x.
- Investigated and implemented multiple bleeding-edge GNN architectures, improving task accuracy by 50+%.
- Authored and presented a long-form report on a novel model architcutre created by myself and two other interns.

Leidos Innovation Center
Software Engineering Intern, High-Performance Systems
May 2024 — August 2024 Arlington, VA

- Created and refined GPU-based signal processing algorithms in CUDA, Rust, and Python for real-time applications, improving performance by 400%.
- Developed a real-time machine learning system to lock onto hidden radar targets using PyTorch with 85+% accuracy.
- Resulting work will be deployed to active defense platforms.

Peraton
Software Engineering Intern
May 2023 — August 2023 Chantilly, VA

- Automated document processing systems using AI-based parsisng systems to increase processing efficiency.
- Authored and presented a whitepaper on systems and processes developed, managing daily intern standups.
- Created ticket and process management websites for U.S. contractors.

Alluja LLC
Founder
2020 — Present Chantilly, VA

- Creator of multiple products including mobile apps (SwiftUI), libraries (Swift, Rust), backend servers (Rust, Python), and frontends (Svelte, Leptos) impacting 5,000+ users.
- Komori, a Discord Siri Shortcuts integration, with paid downloads on the App Store.
- Alluja WebSockets, a WebSocket testing client for macOS, with 100+ downloads.

Objective

Machine learning researcher with a passion for reinforcement learning, low-level programming, and electronic and hardware design. Seeking opportunities to leverage technical expertise, leadership skills, and a commitment to innovation in challenging and impactful projects revolving around deep reinforcement learning, reasoning, policy optimization, and robotics.

Education

Purdue University Honors College
Computer Science B.S., Artificial Intelligence B.S.; Minor in Mathematics
Fall 2022 — Spring 2026 West Lafayette, IN

- 3.7 GPA
- Relevant Coursework: Data Structures, Graduate Machine Learning, Artificial Intelligence, Analysis of Algorithms, Abstract Algebra

Skills/Exposure

- Java
- C#
- Python
- SQL
- MongoDB
- Swift
- Kotlin
- Svelte
- JavaScript
- TypeScript
- HTML
- CSS
- Rust
- C
- C++
- SvelteKit
- Django
- Actix Web
- Flask
- Spring Boot
- Express
- SwiftUI
- UIKit
- Jetpack Compose
- React
- Leptos
- GStreamer
- Unix
- Systemd
- PulseAudio
- CUDA
- CUTLASS
- NumPy
- PyTorch
- Pandas
- Burn
- SciPy
- Astro

Tools

• EC2 • ECS • S3 • Docker • Docker Compose

Associations

- Purdue Hackers
- Purdue Orbital
- Purdue University Ski & Snowboard Club
- Boiler Book Club
- Purdue Theme Park Engineering & Design
- Mensa International

Research & Leadership

Detecting Source Code Plagiarism in Submitted Assignments

Lead Researcher

Spring 2023 — Present | West Lafayette, IN

- Leading a faculty-selected research team focused on solutions for source code plagiarism in Purdue's Computer Science program.
- Researching Abstract Syntax Trees, source code lexing and parsing, and machine learning techniques.
- Using novel techniques to develop a language-agnostic system for detecting plagairism across classes and project requirements.

Purdue Hackers

Engineering Division Lead & Interim President

Jan 2024 — Present | West Lafayette, IN

- Overseeing all engineering projects, managing time and budget restrictions while keeping engineering officers on pace.
- Managing the infrastructure for the Passports initiative, including authentication and management systems written in Rust and TypeScript.
- Worked on a large-scale project called The Sign, a meter-tall representation of a Conway glider, the Purdue Hackers logo. Project accepted to Hackaday and received 1000+ hits.
- Working on Beacons alongside Era Computer for rapid deployment at events.
- Ran all club events including a 200+ person callout and coordinated 10+ officers during a presidential transition period.

Purdue Orbital

Avionics Design Lead

Jan 2023 — Jan 2025 | West Lafayette, IN

- Led a team of 15+ members to create a custom fault-tolerant system for rocketry systems.
- Developed systems for collecting data for avionics missions using Rust.