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.

Education

Purdue University Honors College Fall 2022 — Spring 2026
Computer Science B.S., Artificial Intelligence B.S.; Minor in Mathematics *West Lafayette, IN*
- 3.7 GPA
- Relevant Coursework: Data Structures, Graduate Machine Learning, Artificial Intelligence, Analysis of Algorithms, Abstract Algebra

Work Experience

Era Computer September 2025 — Present
Fellow *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 May 2025 — Present
Machine Learning Researcher *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 May 2024 — August 2024
Software Engineering Intern, High-Performance Systems *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 May 2023 — August 2023
Software Engineering Intern *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 2020 — Present
Founder *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.

Research & Leadership

Detecting Source Code Plagiarism in Submitted Assignments Spring 2023 — Present
Lead Researcher *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 Jan 2024 — Present
Engineering Division Lead & Interim President *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 Jan 2023 — Jan 2025

Avionics Design Lead *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.

Skills & Associations

- **Programming Languages**: Java, C#, Python, SQL, MongoDB, Swift, Kotlin, Svelte, JavaScript, TypeScript, HTML, CSS, Rust, C, C++
- **Technologies**: 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
- **Platforms**: 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