

JAKE SPANGLER

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Active **Secret Security Clearance** | Certified SAFe 6.0 **Scrum Master** (SSM) | PagerDuty DevOps Professional

EXPERIENCE

Software Engineering Co-op (Capstone)

January 2026 – Present

Cisco – Remote

- Build **Kubernetes**-deployed observability system that automates compliance auditing by consuming Tetragon **eBPF** runtime security events over gRPC, translating kernel-level telemetry into structured compliance evidence.
- Configure eBPF tracing policies to filter kernel-level events for process execution, file access, network activity, and privilege escalation, then ingest and normalize selected telemetry in **Go**, mapping **25+ controls** across **NIST 800-53, CIS, SOC 2**.
- Automate PDF audit report generation in Python with a dashboard for compliance reporting and security activity monitoring.

Embedded Software Engineer Intern

May 2025 – August 2025 | June 2026 – August 2026

Northrop Grumman – San Diego, CA

- Designed and automated Python-based requirement verification tests against a real-time **embedded C** backend, executing on physical lab environments via VM for closed-loop simulation and increasing VTC test coverage by **25%**.
- Investigated and updated C source to isolate root causes of test failures, collaborating with development engineers to resolve defects and improve system reliability.

SELECTED PROJECTS

Jarvis — Personal Second Brain AI Assistant

- Build an **agentic AI** personal assistant with **LangGraph** and **FastAPI** that continuously reasons over interactions to surface relevant information proactively, identify follow-up actions, and execute multi-step workflows with explicit approval policies.
- Design a multi-tier **RAG** memory system with PostgreSQL / pgvector and Redis for semantic retrieval, memory consolidation, versioning, and asynchronous workflows across interactions, facts, habits, and tasks.
- Deploy containerized services to **AWS** with **Terraform** and instrument end-to-end application telemetry using **OpenTelemetry**, **Prometheus**, and **Grafana** to monitor agent execution, tool calls, retrieval performance, latency, and failures.

Viewpoint Robustness of Deep Learning Architectures for Multi-View Object Recognition — Graduate Deep Learning Project

- Benchmark ResNet, ConvNeXt, and Vision Transformer architectures across three multi-view 3D datasets to analyze viewpoint-specific recognition failures.
- Develop a **Graph Neural Network (GNN)** multi-view fusion approach modeling camera viewpoints to recover failures.
- Conduct cross-architecture/dataset analysis and ablations to identify architecture-specific and shared robustness patterns.

Prism — Group Travel Platform (Startup) | prismtrips.com

- Shipped a **production-scale** group travel platform with **120+** REST endpoints and a **real-time multi-user Rust backend** (Cloudflare Workers, D1), reaching **50+** users through AI-assisted development workflows to iterate to a functional MVP over six months.
- Placed **Top 2** among all startups in the CSB program following weekly stakeholder pitches and travel-industry mentorship.

EDUCATION

Lehigh University — Bethlehem, PA

Expected May 2027

B.S. Computer Science, Business | Intercollegiate Honors Program | Minor in Data Science

GPA: 3.75

Coursework: Data Structures & Algorithms, Systems Software, Operating Systems, Computer Architecture, Networks, Deep Learning

LEADERSHIP & INVOLVEMENT

Programming Teaching Assistant [CSE-007] — Lehigh University

August 2024 – May 2025

- Supported **100+** undergraduates in core **object oriented** programming concepts through labs and one-on-one debugging hours.

External Affairs Chair — Computer Science & Business Association [Executive Board]

March 2025 – Present

- Lead external engagement strategy for the CSB Honors Program, coordinating with companies, university department coordinators, and student organizations while managing the organization's social media presence.

TECHNICAL SKILLS

Languages: C, C++, Python, Java, Go, Rust, Assembly, SQL, JavaScript / TypeScript, R, HTML, CSS

Systems & Infrastructure: Linux, Kubernetes / Helm, Docker, AWS, Terraform, Jenkins, Redis, Git, Cloudflare, Maven, OpenTelemetry

Web & Data: React, Node.js, Next.js, Express, PostgreSQL / pgvector, MongoDB, SQLAlchemy, JDBC, OAuth2, REST, schema design

AI & ML: LangGraph, PyTorch, NumPy, pandas, Claude SDK, CNN, GNN, Vision Transformers