

# JOEL CALLICRATE

Cybersecurity AI Researcher | Threat Intelligence | Detection Engineering

Technical leader building AI-assisted systems that turn Internet-scale threat data into faster, more accurate security decisions. Experienced in production detection systems, large-scale investigation workflows, and high-confidence attribution of malicious activity.

## SELECTED HIGHLIGHTS

Designed and deployed Cisco's spamtrap network using adaptive identity and behavioral techniques, **increasing adversary engagement and expanding visibility 30x**

Built a GenAI-assisted rule-generation pipeline that turns campaign evidence into validated detection coverage, reducing engineering escalations and **cutting resolution time 65%**

Built an AI-driven pipeline enabling high-confidence identification of bad actors **used by NCMEC, Interpol, and partner organizations**

## EXPERIENCE

### Cybersecurity AI Researcher

2019 - PRESENT

Cisco Talos

- ▶ Re-architected crawling pipelines, increasing threat-detection throughput 4x
- ▶ Designed AI-assisted enrichment and clustering workflows to map short-lived abuse infrastructure and campaign relationships
- ▶ Built large-scale telemetry analysis pipelines, QR code deobfuscation, semantic search, and investigative support
- ▶ Led technical alignment across three related detection efforts, converging them into a unified system and improving precision from 92% to 98%
- ▶ Identified multiple security vulnerabilities and partnered with engineering teams to drive remediation

### Principal Engineer

2014-2019

Feather Information Technology - Government Programs

- ▶ Led development of an infrastructure framework emulating public-facing systems to validate complex multi-stage attack workflows

## SKILLS

### DETECTION ENGINEERING

Detection engineering, telemetry collection, crawling, infrastructure analysis, attribution

### PRIMARY LANGUAGES

Python, Bash, JavaScript, Go

### DATA & INFRASTRUCTURE

AWS/GCE, MLFlow, Spark, PostgreSQL, Databricks

### AI & LLM SYSTEMS

Foundation model pipelines, semantic search, embedding systems

## EDUCATION

▶ **MS Cybersecurity**  
Johns Hopkins University

▶ **BS Computer Science**  
Oregon State University

- ▶ Built and deployed security capabilities under rapid-response constraints supporting advanced threat investigations in mission-critical environments
- ▶ Audited operational systems, identified capability gaps, and developed mission-aligned tooling alongside investigative teams
- ▶ Trained and advised teams on system administration, observability, and operational tradecraft across distributed environments

**Systems Engineering Technical Advisor (SETA) 2013-2014**

TASC

- ▶ Led architecture for a next-generation tactical SDR framework (~\$20M program), delivering the 1.0 release on schedule
- ▶ Designed modular, scalable architecture integrating data-driven signal processing pipelines
- ▶ Supported stakeholder requirements for tactical signal collection systems, aligning customer needs with technical feasibility

**Senior Software Engineer 2007-2013**

Lockheed Martin

- ▶ Designed and deployed virtual SDR architectures delivering ~62x performance improvements over legacy systems
- ▶ Modernized deployment patterns for large-scale multi-rack systems, streamlining operations and lifecycle management and reducing deployment latency by 25%

**Web Developer 2004-2007**

State of Oregon

- ▶ Maintained agency web presence and migrated legacy systems to a government-mandated platform
- ▶ Developed COBOL-driven scripts to automate issuance of titles, permits, and licenses, enforcing validation against invalid and anomalous inputs

**Technical Assistant 2000-2003**

Dallas School District #2

- ▶ Provided system administration and technical support for district office systems, including direct support to the superintendent's staff
- ▶ Supported 10 sites, assisting faculty and staff with system usage, troubleshooting, and operational guidance

**OTHER**

- ▶ 12 years coaching K-8 soccer
- ▶ 9 years mentoring middle school students in my church youth group
- ▶ 7 years supporting species survival planning for animals on the IUCN Red List
- ▶ 3 years as a member of Cisco's competitive CTF team. Ranked top 3% in 2026 Global Challenge

+1 240-801-0993

Joel.Callibrate@gmail.com

Columbia, MD