

# K Hodges

Senior Software Engineer | Seattle, Washington

khod.net | github.com/khodges42 | linkedin.com/in/khodges42 | khodges42@gmail.com

## SUMMARY

Senior software engineer focused on distributed systems, cryptography, resilient infrastructure, and security engineering. Experience designing trust-first systems involving PKI, attestation, authentication, authorization, AI governance, and secure distributed compute across AWS and edge environments. Strong background in Linux internals, performance analysis, and operating customer-impacting systems at global scale using Rust, Go, Kotlin/Java, and modern C++.

## LANGUAGES & TECHNOLOGIES

Rust • C++ • Go • Kotlin / Java • Python • Scala • TypeScript • Kubernetes • Kafka • Spark • PostgreSQL • Elasticsearch • MySQL • DynamoDB • PKI • TLS / X.509 • CloudHSM • KMS • IAM • OpenSSL • gRPC • Linux Internals • eBPF • DTrace • Perf • Terraform • AWS CDK • Threat Modeling • AI Governance • Security Automation

## PROFESSIONAL EXPERIENCE

### Amazon (Kuiper) — SDE II (L5)

Seattle, Washington | Oct 2024 – Current

- Designed and implemented cryptographic provisioning and attestation systems for Kuiper ground infrastructure, including trust-chain validation and secure communication workflows between customer ground stations and satellites.
- Developed idempotent cryptographic APIs for distributed edge systems handling signing, encryption, and device provisioning workflows in customer-impacting environments.
- Integrated Kuiper telemetry and infrastructure systems with AWS identity and authorization platforms, onboarding services into secure authentication and trust frameworks at Amazon scale.
- Owned Operational Readiness Reviews, threat modeling, and security reviews for CloudHSM-backed production PKI infrastructure.
- Led incident response, root cause analysis, and long-term remediation efforts for customer-impacting PKI and manufacturing incidents.
- Designed and scaled distributed satellite simulation infrastructure running on Kubernetes and EKS clusters supporting hundreds of concurrent simulation workloads across hardware, software, payload, and IPv6 networking layers.
- Improved launch performance of Kuiper's Holodeck simulation platform by 20% during a critical pre-launch phase.
- Developed distributed telemetry processing systems and ETL pipelines using Kotlin and Python for large-scale antenna telemetry analysis and routing.
- Led AI governance and secure AI adoption for Kuiper Trust Services, authoring team standards and compliance guidance for AI-assisted development.
- Owned the team's X.509 library and contributed to Amazon's internal Rust cryptography libraries.
- Served as primary reviewer for Post-Quantum Cryptography (PQC) development, improving secure code review standards.
- Developed reusable security integration testing frameworks and coordinated company-wide corrective actions following a critical PKI manufacturing incident.

### Salesforce / Slack — Senior Software Engineer

Remote | Nov 2021 – Nov 2023

- Planned and implemented distributed data lineage systems for Slack's data warehouse ecosystem using Spark, Python, Go, OpenLineage, and TypeScript.
- Worked on large-scale distributed data infrastructure involving Airflow, Vitess, Elasticsearch, MySQL, and Spark-backed systems.
- Modernized Slack's JupyterHub and data tooling infrastructure across AWS environments, improving operational resilience and security posture for engineering and data science platforms.
- Led improvements to Airflow development standards and operational practices, reducing maintenance overhead and improving reliability for distributed workflows.
- Partnered closely with Data Science organizations to improve governance, RBAC, data lineage, experimentation infrastructure, and security posture across analytics platforms.

### Riot Games — Senior Software Engineer / Software Engineer

Los Angeles, California | Aug 2018 – Nov 2021

- Helped develop Riot's Kubernetes platform supporting globally distributed game infrastructure for titles including League of Legends, Valorant, and Legends of Runeterra.
- Developed low-latency distributed infrastructure and operational tooling in Go for large-scale production environments spanning hundreds of clusters globally.
- Designed and implemented an auto-remediation platform using Airflow, Go, DynamoDB, and AWS Lambda that significantly reduced operational overhead and was adopted broadly across Riot infrastructure teams.
- Performed deep Linux systems diagnostics and performance investigations using DTrace, eBPF, Perf, Strace, and SystemTap to identify kernel, driver, networking, and distributed systems bottlenecks.
- Developed container security tooling, security automation, and Kubernetes validation tooling supporting production infrastructure.

### **ReliaQuest — Software Engineer**

Tampa, Florida | Aug 2017 – Aug 2018

- Software Engineer #2 on ReliaQuest GreyMatter, a real-time security analytics platform serving hundreds of enterprise customers.
- Developed distributed streaming and analytics systems using Kafka, Spark Streaming, Elasticsearch, CassandraDB, Scala, and Go.
- Architected and implemented security analytics, content validation, and heartbeat systems for distributed customer environments.
- Developed security automation and validation frameworks improving detection quality across enterprise customer environments.

### **Intrepid Global Solutions — Jr. Developer**

Cape Canaveral, Florida | Apr 2015 – Aug 2017

- Worked on defense-oriented enterprise platforms and customer-facing systems supporting Department of Defense stakeholders.
- Directly interfaced with Department of Defense customers while modernizing internal and external portal systems and operational tooling using Java and modern web infrastructure.

## **EARLY-STAGE STARTUP EXPERIENCE**

### **ENG Stack (Open Source) — Founder**

- Leading development of a GPL-licensed local-first AI engineering ecosystem (Exoshell, NightShift, GlassMind) focused on privacy, developer autonomy, and reproducible AI workflows.

### **Effex Agency — Second Engineer / Partner**

- Built automation, orchestration, deployment tooling, and custom web applications for small businesses.
- Transformed bespoke customer websites into a reusable platform capable of supporting 50+ customers.
- Joined as the second engineer and later became a partial owner.

### **Varnost — Co-founder / Founding Engineer**

- Pivoted the company toward an open-source strategy after the initial commercial approach failed to achieve product-market fit.
- Designed core platform architecture while handling product direction and customer discovery.
- Co-founded a security startup building a container-deployable SIEM platform with former ReliaQuest engineers.

### **ReliaQuest — Software Engineer #2 (Founding Engineering Team)**

- Joined the GreyMatter engineering team as Software Engineer #2 before formal engineering management, development processes, or product organization existed.
- Helped grow GreyMatter from an internal proof-of-concept into a commercial security analytics platform with an initial five-engineer engineering team.
- Worked across architecture, backend systems, infrastructure, automation, customer deployments, and engineering process while operating in a true early-stage startup environment.

## **SELECTED PROJECTS**

**Exoshell** — Secure AI engineering toolkit and local inference environment focused on reproducible development, agent workflows, and engineering productivity.

## **OPEN SOURCE & TALKS**

Free Software Foundation lifetime member • Linux Kernel contributor • TensorFlow contributor • Speaker at HOPE, BSides Tampa, and XDHacks Vancouver • Technical editor and author on security and machine learning publications

# EDUCATION

Eastern Florida State College — Associate of Arts (2015)