

Karl Hill

LEAD SOFTWARE ENGINEER

Summary

Engineering leader with 20+ years of experience driving **cloud-native architecture**, **DevSecOps maturity**, and **high-assurance software delivery**. I combine hands-on technical depth with strategic leadership to improve how teams build, automate, and ship software at scale—known for modernizing platforms, establishing engineering standards, and mentoring teams to deliver **reliable, secure, and maintainable systems** that support evolving business and mission needs.

Professional Experience

Staff Aerospace Software Engineer, Jacobs, Chantilly, VA

SEP 2025 – PRESENT

- Deliver mission-simulation and algorithm-hosting capabilities with validated models aligned to operational requirements.
- Lead Agile delivery and stakeholder communication to ensure predictable execution and roadmap confidence.
- Define engineering standards—branching strategy, PR governance, and review quality—to reduce rework and integration risk.
- Build and maintain CI/CD automation, including testing, security scanning, and artifact promotion, for faster, safer releases.
- Implement and enforce containerized environments and IaC to ensure reproducibility across development and deployment lifecycles.

Lead Software Engineer at NASA, Science Systems and Applications, Inc (SSAI), Lanham, MD

DEC 2017 – SEP 2025

- Architected NASA's cloud-based Flood Mapping System on AWS, delivering real-time satellite-derived flood data for rapid disaster response.
- Implemented a high-performance file and metadata management system using Ceph, optimizing virtual directory mapping and improving data accessibility.
- Redeveloped Earth Observatory's high-traffic website (~1.5M monthly visitors), enhancing performance, usability, and search engine visibility.
- Developed an automated content registry application, increasing NASA's data collection efficiency by 60% and enabling faster researcher access.
- Led CI/CD deployments using GitLab, Docker, and Kubernetes, ensuring seamless integration and stakeholder approvals.
- Directed Agile teams to deliver software aligned with NASA mission objectives, fostering collaboration and innovation.

Sr. Software Engineer, InformedDNA, St. Petersburg, FL

JAN 2016 – DEC 2017

- Architected a Laravel-based case management application, reducing operational expenses by \$30K annually.
- Designed advanced CRM enhancements, increasing customer retention and contributing 15% to revenue growth.
- Developed APIs to optimize database usage and reduce operational overhead.
- Spearheaded system upgrades, doubling security incident response efficiency.

Details

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Links

<https://www.linkedin.com/in/khill/>

<https://karlhill.com>

<https://github.com/karlhillx>

Skills

Team Leadership

Stakeholder Engagement

Cross-Functional Collaboration

Agile Delivery

SDLC Execution

Test-Driven Development (TDD)

Object-Oriented Design (OOD)

API Design & Integration

Cloud-Native Solutions & Platforms (AWS / GCP)

Containerization & Orchestration (Docker / K8s)

Continuous Integration (CI/CD)

DevOps / DevSecOps Practices

UX / UI Development

Sr. Software Engineer, Ticomix, Inc., Washington, D.C.

JUN 2012 – MAR 2015

- Delivered SugarCRM applications for 20+ clients (VDOT, Redskins, Kastle), improving efficiency and productivity across sales departments.
- Reduced backlog by 90%, enhancing software quality & customer satisfaction.
- Developed an app to help companies identify business opportunities.
- Collaborated within a distributed team, demonstrating strong remote collaboration capabilities essential for modern product development.

Software Engineer, Sabre Corporation, Bethesda, MD

JUL 2010 – JUN 2012

- Built and optimized PHP applications for global travel clients, improving user experience and satisfaction.
- Translated client requirements into technical specifications, delivering customized solutions.
- Mentored junior developers, fostering a culture of growth and continuous learning.

Principal Software Engineer, Dante Inc., Arlington, VA

MAY 2007 – JUN 2010

- Engineered Java solutions for industry leaders (Comcast, Mastercard), optimizing operations and increasing efficiency by 40%.
- Conducted unit and acceptance testing using Selenium to ensure software reliability.
- Delivered Scrum-based projects, achieving optimal performance metrics and team collaboration.

Sr. Software Engineer, Visitar, Inc., Reston, VA

JAN 2006 – FEB 2007

- Developed a Java-based telephony application with Asterisk, enhancing SugarCRM with features like ACD, call routing, web-based IVR, and voicemail.
- Built a CRM telephony component using Flash/ActionScript, optimizing call management and handling over 1000 daily customer interactions..
- Rapidly identified and resolved technical issues, achieving a 99% reduction in system downtime.

Software Developer, Verizon Business, Herndon, VA

NOV 1999 – MAR 2005

- Built NetSec's managed security-services platform, Finium, leading to a tenfold increase in client engagements and a \$105M acquisition by MCI/Verizon.
- Improved client onboarding efficiency by 75% through internal administration systems using PHP and Java.
- Key contributor to a 7+ person Java Agile team, transitioning from XP and waterfall methodologies to Scrum, enhancing software quality.

Education

Bachelor of Science, Computer Science coursework, University of Maryland

Associate of Arts, General Studies, Howard Community College

Certifications

Professional Scrum Master™ II (PSM II), Scrum.org

Professional Scrum Developer™ I (PSD I), Scrum.org

Certified ScrumMaster® (CSM®), Scrum Alliance

Project Management, Rutgers University

Technical Skills

Languages: JavaScript, Python, PHP, Java, Perl, Bash

Frameworks & Libraries: Node.js, Laravel, React, Tailwind, jQuery, REST APIs

Databases & Search: MySQL, PostgreSQL, SQL Server, Oracle, Elasticsearch

DevOps & Cloud: Docker, Kubernetes, AWS (EC2, S3), GitLab CI/CD

Tools & Platforms: Git, JetBrains IDEs, Jira, Figma, Vite, NPM, Composer