

Zack Spellman

Seattle, WA | [linkedin.com/in/zack-spellman/](https://www.linkedin.com/in/zack-spellman/)

Accomplished senior engineer and team leader with 15+ years of experience delivering scalable, high-performance systems at Meta and Amazon. Passionate about solving complex problems in system architecture, service resilience, and domain modeling. Proven track record of driving major performance improvements, mentoring engineers, and shipping resilient APIs and user-facing features quickly and safely.

Technical Skills

Front end: React, Next.js, Tailwind CSS, jQuery, HTML

Back end: API modeling and evolution, C++, Kotlin, Java, Python, Quarkus, Spring Boot, Django

Persistence: Data modeling for both SQL and NoSQL, DynamoDB, Apache ZooKeeper

Infrastructure: Kubernetes (K8S), Docker, Continuous Deployment, Prometheus, OpenTelemetry

Core Competencies

Technical Team Lead | Cross Functional Coordination | Engineer Mentor | Technical Educator |
Backwards-Compatible API Evolution | Effective Metrics and Monitoring | Performance Optimization |
Project Management | Software Quality | Fast Failure Mitigation | Experiment and Data Analysis

Professional Experience

META, Seattle, WA

Staff Software Engineer

Senior Software Engineer

Instagram Notifications (July 2023 - April 2025)

October 2016 - April 2025

July 2022 - April 2025

October 2016 - June 2022

Responsible for all notifications sent by Instagram and Threads, with a focus on ensuring the operating data from this system was accurate, actionable, and accessible to ML recommendation systems.

- Added flexible monitoring to measure and pinpoint system latency and failures. In one half, this reduced median time to detect from 24 hours to 90 minutes.
- Introduced a new component-based system design which empowered faster, safer changes. Using this, moved notification filtering rules earlier, creating a 20% capacity win in six months.
- Partnered with the data science team to create a new foundational notifications experience dataset. This enabled reductions in erroneous notifications by 18%.

Signals Gateway (Jan 2021 - June 2023)

Led effort to build an externally deployed, automatically updateable data processor for handling advertising signals in a first party context.

- Delivered a greenfield, externally deployed, kubernetes-based data processor in four months which ran for just over \$100/mo and could handle 2000 TPS
- Followed up with a multi-tenant version for agencies which could scale horizontally and be offered for under \$10/mo, just six months later.
- Performed a deep analysis of bottlenecks and updated resource allocation within k8s to deliver twice the throughput with no code changes.

Facebook Marketplace (Jan 2019 - Dec 2020)

Focused on Buyer Experience for Facebook Marketplace, specifically improving the performance of the application while maintaining a high bar for recommendation quality and transactions completed.

- Delivered a faster first page experience (50ms less for at least 75% of users) by reducing the candidate set in early stage ranking and streaming the top 20 items from full ranking.
- Improved result quality by developing a dynamic controller which considered more candidates when time and capacity were available, creating a 0.3% increase in transactions completed.

Shard Manager (Oct 2016 - Dec 2018)

Maintained and evolved the Shard Manager service, which handled workload distribution and failover for backend services and databases as a service.

- Designed the next generation architecture for separating sharding decisions from execution, enabling pluggable sharding strategies and broadening the addressable market internally.
- Reworked internal CLI and Web UI for interacting with the infrastructure service, reducing support requests to on-call by 30%.

AMAZON, Seattle, WA**Oct 2009 - Sept 2016****Software Development Engineer****Platform Excellence** (Oct 2009 - Sept 2016)

Built developer tools for detecting, preventing, and remediating outages for amazon.com. Worked with teams across the purchasing pipeline to learn their needs and deliver actionable insights.

- Developed a company-wide service health dashboard which automatically gathered service topology and health metrics for over 2,000 services.
- Created a company-wide repository of system changes used during outages to determine root cause, collecting information about over 80,000 changes per day.
- Built a load testing tool used by over 200 teams to quantify their service's scaling characteristics and failure modes, resulting in three years of zero downtime peak days.
- Mentored 10 junior engineers across the company
- Recorded "Best Practices for Outage Resolvers" which achieved more than 20,000 views.
- Presented the "Builder Tools 101" course for new hires, assisting over 1,000 new employees
- Identified the need for and wrote automation for the setup of new developer workstations, saving 14 years of developer time per year in two weeks.

Education**Bachelor of Science (BS) Computer Science****Bachelor of Science (BS) Math**

University of Washington, Seattle