Thomas McKernan

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Professional Summary

Software Engineer with 5+ years of experience in cloud infrastructure, DevOps automation, and distributed systems. Skilled in Java, Kotlin, Python, and Rust, with expertise in CI/CD pipelines, Kubernetes, Docker, Terraform, AWS, and cloud-native solutions. Proven track record of optimizing AWS costs, improving system performance, troubleshooting customer issues, and mentoring team members to enhance engineering practices.

Skills

Programming: Java, Kotlin, Python, Rust, Bash
Cloud & DevOps: AWS (S3, DynamoDB, EKS, ECR, SQS), Kubernetes, Docker, Helm, CloudFormation, GitHub Actions, Jenkins, CI/CD, Terraform
Tools & Frameworks: Spring, Linux, Typescript, Git
Other: Agile, Scrum, Mentoring, Problem-Solving, Ownership

Experience

Senior Software Engineer 08/2023 – Present
SS&C Advent

- Migrated company CI systems and workflows from Jenkins to modern cloud-native pipelines with GitHub Actions, improving build reliability.
- Built custom automation in TypeScript to standardize component builds across teams.
- Managed Kubernetes deployments using Helm, reducing operational friction and improving rollout safety.
- Maintained infrastructure-as-code workflows with Terraform and CloudFormation, improving repeatability of cluster configuration.
- Maintained development environments, ensuring stability and reliability for all engineering teams.
- Added monitoring and alerting to development environments, proactively detecting issues and reducing downtime.
- Mentored engineers on CI/CD practices, pipeline design, and infrastructure-as-code workflows.
- Collaborated with customer support and account teams to troubleshoot and resolve critical client issues, improving satisfaction and reducing production impact.
- Partnered with development and QA teams to ensure seamless release coordination and reduce rollback incidents.

Software Engineer II 03/2022 – 07/2023
Amazon Web Services

- Analyzed and optimized AWS S3 usage patterns, reducing monthly storage costs by 60%.
- Designed high-performance Java data structures to improve CPU efficiency by 20%.
- Partnered with cross-team stakeholders to deliver features that improved real-time availability metrics.
- Automated global parity and scalability through improved CI/CD processes with Amazon's Internal Tooling.
- Implemented a TTL system with a distributed locking mechanism for scanning and expiring database items, improving data consistency and reliability.
- Developed internal tooling in Python and Java for collecting logs and internal metrics, streamlining debugging and operational workflows.
- Served as on-call engineer for production systems, responding to incidents, troubleshooting issues, and ensuring high availability and reliability for customers.

- Collaborated on a Rust storage engine and performance testing, working with senior engineers to improve system throughput and scalability.

Software Engineer I 02/2020 – 03/2022

Amazon Web Services

- Upgraded Python systems from 2.7 to 3.x, preventing EOL issues and security vulnerabilities.
- Built and launched CloudWatch Contributor Insights dashboards for DynamoDB using CloudFormation.
- Investigated and resolved persistent DynamoDB throttling using logs and metrics analysis.
- Implemented automation for ticket data enrichment using custom Python tooling.
- Served as on-call engineer for production systems, responding to incidents, troubleshooting issues, and ensuring high availability and reliability for customers.

Software Engineer Intern - Back End Team 05/2019 – 08/2019

Peapod Digital Labs

- Built and maintained a sidecar service supporting Peapod microservices, improving modularity and deployment flexibility.
- Researched Docker and Kubernetes to support migration from monolithic architecture to microservices.
- Conducted performance testing using Gatling and Vegeta to identify bottlenecks and optimize service latency.
- Developed internal full-stack applications to automate CRUD operations and improve team efficiency.

Software Engineer Intern - Front End Team 06/2018 – 03/2019

Peapod Digital Labs

- Developed a reusable Vue.js component library to standardize UI elements across web applications.
- Researched integration strategies for Vue and Angular frameworks to support hybrid projects.
- Investigated cross-platform frameworks including NativeScript, Xamarin Forms, and Flutter for mobile app development.
- Collaborated with the front-end team to implement unit tests, ensuring component reliability and maintainability.

Projects

League of Legends Esports Platform — Discord Bot, API Service, Data Loader, and OpenAPI Specification

- Designed and built an end-to-end esports data platform consisting of a Kotlin-based Discord bot, a backend API service, and a formal OpenAPI specification.
- Developed a feature-rich Discord bot providing match schedules, results, standings, user predictions, and personalized settings for global esports regions.
- Implemented a backend API service responsible for data aggregation, normalization, caching, and persistence, decoupling Discord interactions from business logic.
- Authored a comprehensive OpenAPI specification to standardize service contracts, enable client generation, and improve maintainability.
- Integrated with third-party esports data providers and handled region-specific formats, time zones, and tournament structures.
- Designed persistent storage and stateful workflows to support concurrent users and prediction tracking.

Infrastructure Libraries & Platform Tooling — Kotlin Utilities, Metrics, and Public Infrastructure

- Developed and maintained shared Kotlin utility libraries to standardize patterns across services, including configuration handling, logging, error modeling, and concurrency primitives.
- Built a lightweight metrics framework to simplify instrumentation and expose consistent telemetry for monitoring and alerting.
- Designed metrics abstractions to support multiple backends while minimizing coupling.
- Created and managed public infrastructure repositories defining reusable CI/CD workflows, infrastructure templates, and operational conventions.

- Codified infrastructure and release practices to improve consistency, reliability, and onboarding across projects.
- Emphasized strong typing, composability, and clear APIs to reduce duplication and operational risk in distributed systems.
- Designed AWS CDK-based deployment pipelines to automate the release of shared libraries and infrastructure components.
- Integrated GitHub-native security tooling to enforce dependency updates and prevent vulnerable artifacts from being released.

Kotlin/Spring gRPC

- Improved gRPC error handling in the grpc-spring library by implementing proper exception translation and mapping between `ResponseStatusException` and gRPC `Status` codes.
- Contributed to fixing `SecurityContextHolder` for kotlin coroutine based grpc services.

Education

University of Dayton 08/2016 – 12/2019
B.S. Computer Science, Minor in Mathematics