

Alexandra M. Carter

Principal Java Engineer & Microservices Architect

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10+ YEARS JAVA PRINCIPAL ENGINEER MICROSERVICES PERFORMANCE & OPTIMIZATION

ORACLE & POSTGRESQL

PROFESSIONAL SUMMARY

Principal-level Java engineer with 10 years at Northwind Systems, growing from junior to principal while leading the design and implementation of high-throughput microservices. Deep experience across major Java versions (7–21), Spring-based ecosystems, and performance tuning for mission-critical, data-intensive platforms backed by Oracle and PostgreSQL. Strong focus on clean architecture, scalability, and reliability, with proven success mentoring teams and driving technical direction in an internal-facing, product-engineering environment.

End-to-end microservice design & modernization High-volume OLTP & reporting workloads

GC, profiling, and query optimization Team leadership & technical mentorship

Limited direct client exposure; strong internal stakeholder focus

PROFESSIONAL EXPERIENCE

Principal Java Engineer / Microservices Architect
Northwind Systems, Inc.

2022 – Present | Seattle, WA (Onsite/Hybrid)

- Own architecture and implementation of a microservices platform processing 50M+ transactions/day for internal financial operations.
- Lead a team of 6–8 engineers, setting coding standards, reviewing designs, and guiding delivery across multiple services.
- Redesigned legacy Java 8 monolith components into Spring Boot–based microservices, reducing average latency by ~40% and incident rates by ~30%.
- Introduced standardized observability (OpenTelemetry, Prometheus, Grafana) and SLOs, improving mean time to resolution for production issues.
- Partner with product and platform teams (limited direct client contact) to refine technical requirements and align solution design with roadmap.

Senior Java Engineer / Team Lead
Northwind Systems, Inc.

2019 – 2022 | Seattle, WA

- Led development of core Java services handling internal order orchestration and billing across Oracle and PostgreSQL-backed systems.
- Optimized JVM performance using profiling (YourKit, JFR) and GC tuning, cutting CPU usage by 25% on key workloads.
- Refactored high-traffic APIs, reducing 95th percentile response times from 900ms to under 300ms through caching, batching, and SQL optimization.
- Coordinated cross-team design sessions and performed design reviews to ensure consistency in API standards and data models.

- Mentored 4+ junior/mid-level developers, improving onboarding time and code quality across the team.

Software Engineer (Java)

2017 – 2019 | Seattle, WA

Northwind Systems, Inc.

- Developed RESTful Java services for internal order management and reporting using Spring, Hibernate, and Oracle.
- Migrated key services from Java 7/8 to Java 11, resolving compatibility issues and leveraging new language features where appropriate.
- Collaborated with DBAs to redesign slow queries and indexes, achieving 3–5x performance improvements on critical reports.
- Improved test coverage and reliability through JUnit/Mockito tests and integration tests against in-memory databases.

Junior Java Developer

2015 – 2017 | Seattle, WA

Northwind Systems, Inc.

- Implemented backend features and bug fixes in Java for internal line-of-business applications.
- Assisted in decomposing a legacy Java EE application into smaller, REST-based services.
- Wrote and maintained PL/SQL and PostgreSQL functions, views, and scripts for data transformations and batch jobs.
- Worked closely with senior engineers to adopt coding standards, CI/CD practices, and branching strategies.

SELECTED PROJECTS

Microservices Modernization of Order Processing Platform

Principal Engineer & Architect | Java 11–17, Spring Boot, Kafka, Oracle, PostgreSQL, Docker, Kubernetes

Led architectural design and phased migration of a monolithic Java 8 order processing system into a suite of independently deployable microservices. Introduced event-driven communication using Kafka, standardized REST contracts, and implemented blue/green deployments. Achieved ~40% latency reduction and significantly improved release frequency while maintaining backward compatibility for internal consuming systems.

Performance Optimization for Financial Reconciliation Engine

Senior Engineer | Java 8–11, Spring, Oracle, PL/SQL, JFR, YourKit

Profiled and optimized a reconciliation engine handling large nightly batches and on-demand reporting. Eliminated memory hotspots, tuned GC parameters, and refactored N+1 database access patterns into bulk operations. Partnered with DBAs to optimize indexes and partitioning. Reduced batch processing times from 4+ hours to under 90 minutes and improved system stability under peak load.

Unified Reporting Microservice for Cross-Database Analytics

Lead Developer | Java 17, Spring Boot, PostgreSQL, Oracle, Flyway, REST

Designed and implemented a reporting microservice that federated data across Oracle and PostgreSQL sources behind a consistent REST API for internal analytics tools. Introduced a caching layer and query abstraction to support complex filters without exposing underlying schemas. Improved report generation times by 60% and simplified data access for multiple internal teams with minimal direct client involvement.

CORE SKILLS

LANGUAGES & PLATFORMS

Java 7–21 JVM internals & GC tuning Kotlin (working) SQL / PL/SQL Shell scripting

FRAMEWORKS & MICROSERVICES

Spring Boot Spring Cloud Spring Data / JPA / Hibernate RESTful APIs Event-driven architecture Kafka

DATABASES

Oracle PostgreSQL Query optimization Indexing & partitioning Flyway / Liquibase

DEVOPS & TOOLING

Docker Kubernetes CI/CD (Jenkins, GitLab CI) Git Maven / Gradle

PERFORMANCE & QUALITY

JFR / YourKit / VisualVM Load testing (JMeter/Gatling) JUnit / Mockito Contract & integration testing

Observability (OpenTelemetry, Prometheus)

LEADERSHIP & COLLABORATION

Team leadership Technical mentorship Architecture reviews Agile/Scrum Internal stakeholder collaboration

Limited client-facing experience

EDUCATION

University of Washington

B.S., Computer Science

2011 – 2015 | Seattle, WA

CERTIFICATIONS & TRAINING

- Oracle Certified Professional, Java SE 11 Developer
- Oracle Database SQL Certified Associate (coursework & exam)
- Spring Professional Certification (Core Spring & Spring Boot)
- Internal architecture and leadership programs at Northwind Systems

ADDITIONAL INFORMATION

- Primary focus on backend engineering and architecture; minimal direct customer-facing responsibilities.
- Experience working in regulated, audit-conscious environments (logging, tracing, access control).
- Regular contributor to internal engineering guidelines and code-quality practices.