Ramalingam N

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Summary

Backend engineer with nearly 2 years at Accenture owning **2 production event-driven Azure integrations** (C#/.NET 8) for a grocery-retail client, including the root-cause fix for **47 lost invoices**. Built and deployed a personal **Java 17/Spring Boot webhook platform** on Kafka, PostgreSQL and Redis with transactional outbox publishing and consumer deduplication.

Technical Skills

Languages: Java, C#, SQL
Backend: Spring Boot 3, Spring MVC, Spring Data JPA, Hibernate, Spring Security, Spring Kafka, .NET 8, REST APIs
Distributed Systems: Event-Driven Architecture, Microservices, Transactional Inbox and Outbox, Idempotency, Claim-Check, Retries, Circuit Breaking
Data & Messaging: PostgreSQL, Redis, Apache Kafka, Azure Service Bus, Azure Table Storage
Cloud & DevOps: Azure Functions, Blob Storage, Application Insights, ARM templates, Azure DevOps CI/CD, Docker, Git
Testing & Tools: JUnit 5, Mockito, Testcontainers, WireMock, xUnit, Moq, Polly, Resilience4j, Maven, Postman, Swagger/OpenAPI

Experience

Accenture Nov 2024 – Present
Associate Software Engineer | Packaged App Development *Chennai, India*

- Owned **2 production integrations** in C#/.NET 8 on Azure Functions: customer events to a data lake (**229 ms p95 / 365 ms p99**) and order documents to SAP S/4HANA (**312 ms p50**), covering implementation, ARM templates, Azure DevOps releases and production support.
- Built an HTTP-triggered order-document API secured with OAuth2/JWT via Azure AD; used the **Claim-Check pattern** to decouple ingestion from SAP delivery and tested XML-to-SAP mapping with xUnit/Moq golden files.
- Replaced a **splitter/timer pipeline** with one Service Bus-triggered .NET Azure Function that maps store assortment and pricing and sends per-store payloads to a food-delivery partner's API.
- Engineered **per-store idempotency** with SHA-256 content-hashed, write-once Blob markers to skip previously sent payloads on retry; separated permanent and transient errors with Polly backoff and HTTP 429 Retry-After handling.
- Traced **47 lost invoices** to same-millisecond blob filename collisions; made filenames unique per invoice, capped concurrency to the receiver's limit, and tested the fix with **5,002 files and zero overwrites**.
- Created a .NET **XML duplicate-detection tool** using normalized content hashing and transaction/handling-unit ID checks across **3,700+ blobs** in Azure Blob Storage during production investigations.
- Automated failure detection with **alerting as code**: deployed KQL rules via ARM across three environments, routed alerts to source-system owners and **trained colleagues on the triage workflow** through knowledge-transfer sessions.
- Led an **SFTP security upgrade** across four Function Apps and five integrations through configurable host-key prioritization; **coordinated QA validation with the partner** and completed the cutover with zero downtime.

Projects

Reliable Webhook Delivery Platform | *Java 17, Spring Boot 3.2, Kafka, PostgreSQL, Redis* | Live | GitHub

- Developed **three Spring Boot services** for ingestion, dispatch and administration, connected through Kafka, with a queryable PostgreSQL dead-letter store that replays through the outbox.
- Designed **transactional outbox publishing** with an after-commit fast path and a periodic FOR UPDATE SKIP LOCKED sweeper to recover unpublished events after process restarts.
- Added **ingestion and consumer deduplication**: a Redis check at ingestion and a PostgreSQL inbox claim on unique (event_id, endpoint_id) pairs using ON CONFLICT DO NOTHING to identify Kafka redeliveries.
- Separated fast- and slow-lane Kafka processing with distinct consumer concurrency, per-endpoint **Resilience4j circuit breakers** and non-blocking backoff retries, trading strict FIFO ordering for failure isolation.
- Validated **crash recovery across 2 failure boundaries**: after database commit and after Kafka publication, checking outbox recovery and inbox handling of reprocessed events.
- Secured **webhook delivery** with **HMAC-SHA256 signing**, API-key authorization and SSRF validation of resolved IPs at endpoint registration; covered unit, persistence, service, web and end-to-end tests with Testcontainers and WireMock.

Achievements & Training

Algorithms: Solved **720+ LeetCode problems** in Java and SQL, including 50+ SQL problems.

Training and Mentoring: Completed Accenture's three-month **Cloud-Native Microservices residency** covering Java, Spring Boot and Docker. **Mentored college students** through Java, OOP and data-structures sessions as one of three senior mentors.

Education

SNS College of Engineering Coimbatore, India
Bachelor of Engineering in Computer Science and Technology | ***CGPA: 8.8*** *May 2020 – Apr 2024*