Anshpreet Singh

GitHub | LinkedIn | Email

Summary

Backend engineer focused on building reliable, type-safe systems with Java and Spring Boot. Experienced in designing asynchronous workflows, concurrency control mechanisms, and idempotent APIs. Strong emphasis on database schema design, integration testing, and production-grade infrastructure.

Education

July 2024 – May 2028 **PCTE Institute Of Engineering and Technology, Punjab**
B.Tech. in Computer Science Engineering (Current)

Work Experience

Backend Engineer (Internship), Scraplabs – Remote Aug 2025 – Present

- Engineered the core scheduling engine for live class bookings, implementing database-level slot locking and conflict detection to ensure data consistency
- Built an end-to-end automation pipeline for Zoom recordings using webhook consumers, asynchronous workers, and AWS S3/CloudFront for secure content delivery
- Led PayPal integration from sandbox to production, designing retry-safe payment flows using unique invoice IDs to guarantee idempotency across network failures
- Maintained system reliability via Flyway schema migrations and a suite of ∼500 unit and integration tests to prevent regression in pre-launch environments

Backend Consultant (Freelance), FeedBeep – Remote Jul 2025 – Aug 2025

- Architected an AI-powered news ingestion pipeline using NewsData.io, Google Gemini, and Supabase
- Implemented rate limiting, monitoring, duplicate detection, and automated quality checks

Backend Engineer (Freelance), Compare.AI – Remote Jun 2025 – Jul 2025

- Built production REST APIs using Spring Boot and PostgreSQL for an AI tool discovery platform with role-based admin workflows

Projects

EventRelay – Reliable Webhook Processing Platform | **Link**

- Designed a reliable webhook ingestion platform using a persistent database-backed state machine (RECEIVED, PROCESSING, FAILED) to ensure auditability
- Implemented strictly serialized event processing using PostgreSQL `FOR UPDATE SKIP LOCKED`, preventing race conditions and ensuring exactly-once execution
- Built a fault-tolerant worker system with exponential backoff retries and dead-letter queues to handle downstream failures gracefully
- Validated system correctness and idempotency using Testcontainers for realistic integration testing against live PostgreSQL instances

ChatVault – One-to-One Messaging Platform | **Link**

- Engineered a real-time messaging backend using Spring Boot WebSockets and an in-memory broker, validated for ∼30 concurrent active connections
- Leveraged **Java 21 Virtual Threads** to optimize I/O blocking operations, reducing thread overhead compared to traditional platform threads
- Secured WebSocket endpoints and REST APIs using Keycloak OAuth2 for stateless authentication and identity management

Skills

Languages	Java, SQL
Backend & Frameworks	Spring Boot, Spring Security, Spring Data JPA, REST APIs
Databases	PostgreSQL, MySQL
Concurrency & Systems	Asynchronous Processing, Database Transactions, Virtual Threads
Authentication & Security	Keycloak, OAuth 2.0, Role-Based Access Control (RBAC)
DevOps & Infrastructure	Docker, AWS S3, CloudFront, Flyway
Testing	JUnit, Integration Testing, Testcontainers