AVIJIT PAUL

Backend Engineer | *Java · Spring Boot · Microservices · Distributed Systems*

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Professional Summary

Results-driven Backend Engineer with production experience designing **microservice platforms serving 100+ enterprise users**. Specialized in **Java 17/21, Spring Boot, Spring AI**, and event-driven architecture. Built AI-powered chatbots with LLM tool-calling, real-time collaboration systems, and enterprise search platforms. Track record of reducing manual workflows by **35%** and accelerating development cycles by **40%**. Strategic problem-solver with a systems-thinking mindset, seeking high-impact remote roles in distributed systems and platform engineering.

Technical Skills

- **Languages & Core:** Java 17/21, Python, JavaScript/TypeScript, SQL.
- **Frameworks:** Spring Boot 3.x, Spring Security, Spring Data JPA, Spring Cloud, Hibernate, Lombok, MapStruct.
- **Microservices:** Eureka Service Discovery, Spring Cloud Config, API Gateway, Feign Client, Flyway Migrations.
- **AI/ML Integration:** Spring AI, Ollama (Llama 3.2), LLM Tool-Calling, Conversational Memory, JSON Repair.
- **Messaging & Real-Time:** RabbitMQ (STOMP Relay), WebSocket, Server-Sent Events (SSE), Reactor/WebFlux.
- **Data & Storage:** PostgreSQL, MySQL, JPA Specifications/Criteria API, JPQL, Query Optimization.
- **DevOps:** Docker, On-Premises Linux Servers, Kubernetes, Bash/Shell Scripting, SSH Tunneling, CI/CD, Git.
- **Frontend:** React, Next.js 14+, Tailwind CSS, SockJS, Responsive Design.
- **Practices:** Agile/Scrum, TDD, Domain-Driven Design, SOLID, Design Patterns, Code Review.

Professional Experience

One Direction Companies Limited (ODCL)   Dhaka, Bangladesh
Software Engineer – Backend & Platform   Nov 2024 – Present

Lead Backend Architect defining engineering standards and tech strategy. **Architected entire distributed ecosystem** (Gateway, Registry, Config, Auth) and **Next.js Frontend**, *while owning **Core Domains** (Land Sourcing & Registration, Asset, Purchase) serving* **100+ active users**.

Shimana – Land Management Platform

- **Architected entire Microservice Infrastructure** from scratch: Config Server, Eureka Registry, API Gateway, and Auth Service, ensuring zero-downtime scalability.
- Designed **Core Business Modules** (Land Sourcing & Registration, Asset Management, Purchase Requisition), managing the **full land acquisition lifecycle** (owner vetting, price negotiation audit trails) via complex relational schemas and multi-stage approval workflows.
- Developed **automated PDF Book Builder** with dynamic table of contents generation, document categorization, and multi-section merging using PDFBox.
- Engineered **centralized Location Service** as single source of truth for a 5-level hierarchy (Country → Division → District → Thana → Mouza), eliminating data duplication across 6+ services.
- Implemented **8-field dynamic search** with JPQL ILIKE patterns and JpaSpecificationExecutor, enabling sub-second queries across complex relational datasets.
- Reduced **manual administrative effort by 35%** through automated workflows (notifications, reminders, status tracking).

Business Directory – Real-Time Collaboration & AI Platform

- Built complete **Meeting Scheduler Service** with file attachments, participant management, and **event-driven notifications** using Spring ApplicationEventPublisher.
- Developed **real-time messaging system** with group chat (per meeting) and one-to-one personal chat, featuring unread tracking, read receipts, and participant validation—all over STOMP/RabbitMQ.
- Implemented **custom JWT WebSocket authentication** via ChannelInterceptor, validating tokens on CONNECT and enforcing per-meeting authorization.
- Developed **AI-powered meeting scheduling chatbot** using **Spring AI ChatClient** with conversational memory for multi-turn context.
- Engineered **LLM tool-calling** with custom JSON repair logic (regex-based bracket balancing) to handle malformed outputs—achieving **95%+ tool execution success rate**.
- Delivered **SSE-based reactive streaming** using Project Reactor, filtering JSON blocks while executing tools asynchronously.

DevOps & Developer Experience

- **Lead Frontend Engineering (Next.js 14+):** Built the complete responsive dashboard with complex form state management, server-side rendering (SSR), and a reusable component library.
- **Mentored 2 junior developers** on backend architecture, system design, and microservices best practices.
- Implemented **Redis caching** for session management and frequently accessed data, reducing database load.
- Authored **418-line Bash orchestration script** for multi-phase startup with health checks, SSH tunneling, and graceful shutdown.
- Containerized stack with **Docker Compose** (225-line config): Flyway migrations, health probes, and multi-schema PostgreSQL.

BJIT   Dhaka, Bangladesh
Trainee Software Engineer (Java, Spring Boot, React)   2023
- **Engineered** low-latency Java microservices participating in full SDLC: requirement analysis, architecture design, implementation, unit testing (JUnit/Mockito), and deployment.
- **Implemented** production-grade Docker containerization, build automation, and microservices patterns.
- Proposed and implemented code improvements during architecture reviews, reducing technical debt.

Square Health Ltd   Dhaka, Bangladesh
Software Engineer Intern   2023
- Designed and delivered **Hospital Billing System** with secure financial workflows and high-volume transaction logging.
- Collaborated on database schema optimization and resolved production-level defects.

Projects

Personalized Health Management System | *Spring Cloud, Eureka, Zipkin, Feign*   GitHub
- Built distributed microservices with service discovery (Eureka), distributed tracing (Zipkin), and inter-service communication (Feign).
- Implemented centralized configuration and API Gateway routing for unified access control.

Hospital Billing System | *Spring Boot, JWT, JPA, MySQL*   GitHub
- Designed secure financial workflows with role-based authorization (Admin, Staff, Patient).
- Optimized database schema for high-volume transaction logging and audit trails.

Online Book Library | *Spring Boot, JPA, MySQL, REST API*   GitHub
- Clean architecture with domain-driven design, role-based access (Customer/Admin), and book reservation system.

Bomber-man Game Engine | *Java, PApplet, 2D Graphics*   GitHub
- Dynamic 2D game with destructible environments, enemy AI pathfinding, and strategic bomb mechanics.

Education & Certifications

B.Sc. in Computer Science & Engineering   2018 – 2022
American International University–Bangladesh (AIUB)   CGPA: 3.64 / 4.00
- **Thesis:** Real-Time Threat & Anomaly Detection from Surveillance Video using LRCN & LSTM.
- **Award:** Champion – Senior ICT Olympiad (JARVIS, ACC, AIUB 2023).

Certifications: Software Product Management (University of Alberta/Coursera)
English: IELTS Academic **7.5** (Professional Working Proficiency)

Leadership & Activities

AIUB Computer Club   2018 – 2023
- Organized events including CS Fest and Cyber Gaming Fest, coordinating logistics for 200+ participants.

AIUB Community of Engineering Students (ACES)   2018 – 2022
- Contributed to community welfare initiatives and technical workshops.

Early Achievements

- **I-genius Award** – GrameenPhone/Prothom Alo Internet Carnival (2011)
- **Best Presentation** – Digital Innovation Fair (2012, 2013): E-Education for Handicapped Students; Freelancing Workshop