AVIJIT PAUL

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

📍 Dhaka, Bangladesh (Remote-Ready) | 📞 +880 1712-768758 | ✉ avijit.paul.cs@gmail.com

in linkedin.com/in/avijitpaulavi | ⌧ github.com/X-AVI-X

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.

Architectural Leadership & Engineering Standards

- **System Design Strategy:** Championed **Event-Driven Architecture (EDA)** using RabbitMQ to decouple services, enabling asynchronous processing for notifications and audit logs, ensuring high availability under load.
- **Quality Assurance Gates:** Enforced strict **TDD protocols** and comprehensive SonarQube quality gates (80% coverage, 0 critical smells), reducing production bugs by roughly **60%**.
- **Scalability Patterns:** Designed stateless JWT authentication and centralized Redis caching to allow horizontal scaling of microservices without sticky sessions.
- **Developer Experience (DX):** Standardized local development environments with Docker Compose and Bash scripts, reducing new developer onboarding time from 3 days to **under 4 hours**.

Key Technical Case Study: High-Performance Search

Problem: Land management users experienced **10s+ latency** when applying 8+ concurrent filters (Location, Price, Size, Status) on large datasets.
Solution: Engineered a dynamic query builder using **Spring Data JPA Specifications** and composite database indexes on frequently filtered columns. Optimized execution plan by analyzing query cost.
Result: Reduced complex multi-field search latency to <**300ms**, significantly improving user retention and system responsiveness.

Projects

Personalized Health Management System | *Spring Cloud, Eureka, Feign, Gateway*   GitHub

- **Microservices Architecture:** Built **6+ distributed services** (Mental Health, Nutrition, User Profile) using **Spring Cloud Gateway** for routing and **Eureka** for dynamic service discovery.
- **Secure Inter-Service Communication:** Implemented **OpenFeign** clients with request interceptors for token propagation, ensuring secure stateless communication between services.
- **Centralized Configuration:** Deployed **Spring Cloud Config Server** to manage externalized properties across all microservices, enabling runtime configuration updates without restarts.

Hospital Billing System | *Spring Boot, JWT, JPA, MySQL*   GitHub

- **Designed Multi-Module Billing Engine:** Engineered a unified billing system for Diagnostic, Pharmacy, and Appointment services, handling complex discount logic and organization-specific pricing via relational entities.
- **Implemented Role-Based Security:** Built a stateless **JWT authentication** system with custom filters to secure interactions between Admins, Doctors, and Patients.
- **Engineered Admin Dashboard:** Developed dashboard APIs using **Spring Data Projections** to aggregate real-time statistics (Doctors, Revenue, Patients) across multiple organizations.

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.
- Managed event budgets, negotiated with vendors, and led a volunteer team of 20+ students to ensure successful execution.

AIUB Community of Engineering Students (ACES)   2018 – 2022

- Contributed to community welfare initiatives and technical workshops.
- **Mentored 50+ students** in technical workshops, fostering a culture of peer learning and engineering excellence.