Abhay Pratap Singh

Senior Backend Engineer • Team Lead

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Summary

Senior Backend Engineer and Team Lead with 5+ years of experience architecting scalable multi-tenant SaaS platforms, AI-integrated analytics engines, and high-throughput e-commerce systems. Core expertise in PHP, Laravel, Node.js, and NestJS. Leading cross-functional overseas teams with ownership of architecture, delivery, and mentoring.

Technical Skills

Languages & Frameworks	PHP, Laravel, Node.js, NestJS, TypeScript, JavaScript
Databases	PostgreSQL, MySQL, Prisma ORM, pgvector, Query Optimization, Indexing
AI & Search	OpenAI GPT-4o Mini, GPT-4.1 Mini, LLM-to-SQL, Semantic Search, Vector Embeddings
Caching & Queues	Redis, Laravel Horizon, Async Job Processing, Rate Limiting
Architecture	Multi-Tenant SaaS, REST APIs, DDD, Microservices, Service-Repository, MVC, OOP
DevOps & Cloud	AWS, Docker, Git, CI/CD, Cloudflare
Integrations	ERP (Acumatica), Payment Gateways, Shipping APIs (UPS, FedEx, Purolator), SendGrid, Klaviyo, Google Merchant Center
Security & Auth	JWT with Token Rotation, Session Management, Fraud Prevention

Professional Experience

Senior Backend Engineer • Team Lead
Voyantt Consultancy Services LLP, India — Apr 2021 – Present

Leading backend engineering across multiple SaaS products. Owning architecture decisions, sprint planning, code reviews, and mentoring. Managing cross-functional collaboration with overseas teams across time zones.

Estimate Master — Multi-Tenant Financial SaaS • *NestJS, PostgreSQL, Prisma, Redis, JWT*
- Designed **tenant isolation** using JWT claims + AsyncLocalStorage + Prisma middleware — zero cross-tenant leakage.
- Built **dual pricing engine** (Hourly & OPEX) with profit margin, waste-adjusted costing, and deterministic logic.
- Implemented **snapshot-based audit model** for historical financial integrity across pricing changes.
- Structured backend into **30+ modular feature domains**, enabling parallel team development.

Frontier Dental — Multi-Vendor E-Commerce • *PHP, Laravel, MySQL, Redis, Horizon, Acumatica*
- Built **ERP-integrated storefront** with real-time Acumatica sync for products, pricing, inventory, orders, and returns.
- Designed **idempotent retry logic** and reconciliation jobs, eliminating data drift across systems.
- Integrated **4 shipping providers** with rate shopping, label generation, and webhook tracking.
- Implemented **payments** (Credit Card, PayPal, Pay-Later), **fraud prevention**, and **marketing tools** (SendGrid, Klaviyo, Google Merchant Center) — reducing invalid signups by **18%**.
- Used **Redis queues + Horizon** for async processing with real-time throughput monitoring.

Dialpad Call Intelligence — AI Analytics Engine • *NestJS, PostgreSQL, pgvector, Redis, OpenAI*
- Built AI backend processing **20M+ call records** for real-time organizational analytics.
- Designed **LLM-to-SQL pipeline** (GPT-4o Mini) converting natural language to optimized PostgreSQL queries.
- Implemented **pgvector semantic search** over transcript embeddings for similarity retrieval at scale.
- Integrated **GPT-4.1 Mini** for synthesizing structured analytical responses from raw query results.
- Achieved **sub-10s p95 response time** (~60% improvement) via Redis caching strategy.

Cross-Project Impact
- Reduced **API p95 latency by 35%** via query optimization, N+1 elimination, indexing, and Redis caching.
- Built **n8n automation workflows** for background syncs, alerts, and cross-system orchestration.
- Led **code reviews, architecture planning, and sprint delivery** across distributed overseas teams.

Education

B.Tech in Mechanical Engineering
Dr. A.P.J. Abdul Kalam Technical University — 2015 – 2019