

ANUP KUMAR PAL

anupkumarpal1199@gmail.com

9380341981

[linkedin.com/in/anupkumarpal/](https://www.linkedin.com/in/anupkumarpal/)

anupkumarpal.com

WORK EXPERIENCE

Software Engineer | Bridgestone | December 2024 – Present

- Architected a high-throughput **Kafka**-based event-driven backend platform using **Java (Spring Boot)**, **Python (FastAPI)**, and **Redis**, processing **6K+ events/sec** with zero consumer lag and enabling automated dispatch workflows that reduced event-to-dispatch latency by **10 minutes**, improving operational efficiency across fleet managers, dealers, technicians, and call centers.
- Independently architected and delivered the Dealer Technician App backend from 0→1 within one month of joining, designing a real-time workflow platform using **Kafka** and **WebSockets** that enabled field technicians to digitally capture Proof of Work (PoW), asynchronously communicate with backend event services, streamline end-to-end service workflows, and reduce notification delays and payment disputes.
- Designed and implemented an automated after-hours technician assignment engine that dynamically assigned technicians based on shift schedules, availability, and business rules, eliminating manual dispatch operations and successfully automating assignment for **1M+** roadside assistance events.
- Led a team of 4 backend engineers, driving architecture decisions, design reviews, module ownership, and technical execution from design through production deployment.
- Redesigned and migrated legacy on-prem services to **AWS (ECS, AppConfig, Glue, Secrets Manager, S3)**, improving scalability, fault tolerance, and operational cost efficiency.
- End-to-end owner of a **Kinesis** → **Databricks** streaming data platform, designed a shard partitioning strategy for ~300 concurrent producers, sustaining **50+ MB/s** aggregate throughput, ingesting and transforming **50+ GB/day** into the enterprise data lake with a **2-minute** end-to-end SLA.
- Developed a **LangGraph**-based **multi-agent** incident triage solution integrating **PagerDuty** alerts, semantic runbook retrieval, and remediation recommendations, improving on-call **response efficiency by ~25%**.
- Built secure authentication and authorization services using AWS Cognito, Lambda Authorizers, and Spring Security, supporting 10K+ concurrent users while maintaining **99.99%** authentication availability.

Full Stack Developer | BDIPLUS | May 2024 – November 2024

- Led **Redis-to-MySQL** migration initiatives involving schema redesign, indexing strategies, and query optimization, reducing downtime by **80%**.
- Implemented **Java**-based webhook listeners and designed a **fault-tolerant ledger** system for order transaction flows across multiple payment gateways. Built a complete **refunds/returns** system with workflow state tracking, policy engine, and communication service-integrated using Spring Boot and **asynchronous notification** handlers.
- Optimized backend performance through database query tuning, asynchronous processing, and Redis-based caching, reducing P95 API latency by **40%** and improving request throughput by **2×** under production traffic.
- Developed a reporting dashboard to expose real-time order metrics and system performance, enabling business teams to monitor fulfillment KPIs.
- Standardized APIs into REST-compliant contracts and contributed to system hardening through security audit resolutions, compliance documentation, and on-call rotations.

Associate Cloud Developer | Sprinklr | July 2022 – March 2024

- Engineered a **Kafka**-driven, real-time credit scoring platform in **Java (Spring Boot)** that unified multiple data sources, boosting predictive analytics accuracy by 80%, **accelerating decision-making by 10x**, and delivering substantial improvements in system scalability and efficiency.
- Spearheaded the development of a scalable full-text search service using **Elasticsearch**, with data updates via Kafka consumers written in **Java** for parallel data ingestion and near-real-time index updates.
- Implemented observability and monitoring solutions using **Prometheus**, **Grafana**, and **PagerDuty** alerts, reducing outage risks by 90% and enabling annual infrastructure savings of **~\$10K** through EC2 optimization.
- Automated **Docker**, **Kubernetes** & **Jenkins**-based CI/CD pipelines with rollback & environment promotion capabilities, accelerating release cycles by 60%.
- Built operational dashboards and internal admin tools for pricing, content, and campaign management, providing business teams with centralized control, real-time visibility, and comprehensive audit trails.
- Created **multi-cloud cost** and storage comparison tooling for **VMs**, **Disks**, and **Databases** across **Azure**, **AWS**, and **GCP**, empowering teams to make data-driven infrastructure decisions.

TECHNICAL SKILLS

- **AI/LLMs:** LangChain, LangGraph, MCP Servers, Agent Orchestration, Agentic Workflows, RAG Pipelines, OpenAI API, Retrieval-Augmented Generation (RAG), Prompt Engineering, Tool Calling (Function Calling), Chat Memory, Vector Embeddings, Semantic Search
- **Programming:** Java(8-21), Python, JavaScript, TypeScript, SQL
- **Cloud & DevOps:** AWS (EC2, S3, Lambda, DynamoDB, SQS, SNS, Cognito, Athena, MSK Serverless, CloudWatch, RDS, Aurora), Microsoft Azure, Google Cloud Platform (GCP), Databricks, Docker, Kubernetes, Docker Compose, Git, GitHub Actions, Maven, Gradle, Jenkins, Argo CD, Terraform
- **Backend:** Spring Boot, Spring MVC, Spring Data JPA, Hibernate, MyBatis, Spring Security, Spring AI, REST APIs, Microservices, Django, Flask, Node.js
- **Databases & Search:** PostgreSQL, MySQL, MongoDB, Redis, Qdrant(Vector Store), Apache Cassandra, Elasticsearch
- **Messaging & Distributed Systems:** Apache Kafka, RabbitMQ, Event-Driven Architecture, Multithreading, Concurrency, Distributed Systems
- **Testing & Monitoring:** JUnit 5, Mockito, Dynatrace, AWS CloudWatch, Prometheus, Grafana, PagerDuty
- **Core Concepts:** Data Structures & Algorithms, OOP, SOLID Principles, Design Patterns, JVM, Garbage Collection, System Design, ACID Transactions, Database Indexing, Caching, HLD, LLD, TDD

PROJECTS

Progressive-canary-lab

Tech Stack: Python, FastAPI, Pydantic, Docker, Kubernetes, REST APIs, Microservices, Canary Deployments, Feature Flags

- Designed and implemented a progressive canary deployment platform using FastAPI, Kubernetes, and feature flags, enabling zero-downtime application releases through dynamic traffic routing and controlled rollout strategies.
- Built an automated health-gated deployment controller that continuously evaluated p99 latency, error rates, and service health to automatically promote, rollback, or pause deployments, improving release reliability and reducing deployment risk.

LLM Engineering Platform

Tech Stack: Python, FastAPI, Poetry, LangChain, OpenAI, ZenML, AWS SageMaker, Qdrant, MongoDB, Docker, Postgres

- Architected a modular LLM engineering platform using FastAPI, LangChain, AWS SageMaker, and Qdrant, unifying document ingestion, RAG pipelines, model evaluation, fine-tuning, and inference into a reusable production-ready framework.
- Implemented cloud-native model serving, vector search, and end-to-end observability with automated evaluation pipelines, standardizing AI deployment workflows and improving platform maintainability, scalability, and operational reliability.

ACHIEVEMENTS

- **Individual Excellence Award (Q4):** Awarded for successfully **designing and delivering a scalable call center platform** and building a robust **Apache Kafka and Redis ecosystem** from the ground up, enabling high-performance and reliable operations.

EDUCATION

B.M.S College of Engineering

Bachelor of Engineering in Medical Electronics

CGPA: 8.68 / 10.0

Bengaluru, India

August 2018 - July 2022