

SHUBHAM PALIWAL

Principal Engineer

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SUMMARY

Principal Engineer who turns complex logistics problems into production systems. 9+ years across route optimisation, geospatial services, AI agents and full-stack platforms. I own **FarEye's routing** end to end, converting **15+ enterprise client requirements** into solver capabilities shipped across **7 regions**, and built an AI dispatch agent that cut route planning from **6 hours to 20 minutes**. I use Claude Code, Cursor and MCP-based agent workflows daily to design, build and debug at speed.

EXPERIENCE

Principal Engineer

FarEye

📅 02/2019 - Present 📍 Noida, India

Promoted from SDE1 → SDE2 (2021) → Technical Lead (2023) → Principal Engineer (2026)

- Own the architecture and development of FarEye's **Vehicle Routing Problem (VRP) solver** using Iterated Local Search heuristics, deployed on Kubernetes across **7 global regions**.
- Translate enterprise client requirements into **15+ production routing constraints**, including EV charging, multi-trip reloads, time windows, vehicle capacity, driver shifts, and LTL/FTL planning, owning each from **scoping to UAT sign-off**.
- Architected Pilot Core, an AI agent that automates end-to-end dispatcher workflows, reducing route planning time by **94%, from 6 hours to 20 minutes**.
- Pioneered **AI-native engineering** across the routing team with **Claude Code, Cursor and MCP**-connected agents (Jira, internal knowledge base), accelerating feature delivery, code review and RCA.
- Drove migration of microservices from **AWS EC2 to Kubernetes**, reducing monthly cloud infrastructure costs by **53%, from \$17K to \$8K**.
- Spearheaded the build-vs-buy analysis for mapping infrastructure and drove adoption of self-hosted **OSRM and Valhalla**, replacing third-party APIs and cutting costs by **\$70k annually**.
- Led development and technical onboarding for **FarEye Track**, a real-time shipment visibility platform built on Kafka and Elasticsearch, supporting **20+ enterprise clients** and **\$2M+** in revenue.
- Built a **machine learning-based** Estimated Delivery Date (EDD) prediction system from scratch, achieving **95% accuracy** in production.
- Built a **real-time alerting service in Java** consuming Kafka event streams, triggering notifications on configurable threshold breaches to help enterprise clients reduce theft and improve on-time delivery.
- Designed a monorepo architecture and a **configuration-driven module framework** (Reports, KPIs, Alerts) for the FarEye frontend portal, enabling client-specific customization without code changes.
- Drive the routing technical roadmap with product leadership; **mentor 13 engineers** through design reviews, with **6 promoted to senior roles**.

Full Stack Developer

Craterzone Pvt Ltd (Client: Wynk Music, Airtel)

📅 01/2017 - 02/2019 📍 Gurugram, India

- Optimised and scaled the SEO strategy for the Wynk Music website, driving organic traffic growth from **7K to 700K+** through server-side rendering, keyword optimisation, and performance tuning.
- Developed music player capable of supporting multiple audio formats, including HLS.js and MP3.
- Built a content management system (CMS) in **Angular** for curating content across the Airtel TV iOS and Android apps.

SKILLS

Languages:

TypeScript, JavaScript, Java, Ruby, Python

AI & LLM:

Machine Learning, Predictive Modeling, AI Agents, Agentic AI, Large Language Models (LLM), LangChain, LangGraph, RAG, Model Context Protocol (MCP), Prompt Engineering

Optimisation & Geospatial:

Vehicle Routing, Jsprit, OR-Tools, OSRM, Valhalla, Iterated Local Search

Backend & Data:

Node.js, Ruby on Rails, Microservices, Kafka, PostgreSQL, Elasticsearch, Redis

Frontend:

React, Angular, Redux, Zustand, Server-Side Rendering (SSR), Web Performance, Technical SEO, Monorepo Architecture, Turborepo, Lerna

Cloud & DevOps:

Kubernetes, AWS (Lambda, EC2), Docker, GitHub Actions, CI/CD, Cloud Cost Optimisation

EDUCATION

B.Tech

Raj Kumar Goel Institute Of Technology

📅 07/2013 - 06/2017

📍 Ghaziabad, India

GPA

7.8 / 10

KEY ACHIEVEMENTS

💎 53% Cloud Cost Reduction

Led the migration of microservices from AWS EC2 to Kubernetes, reducing monthly infrastructure spend from \$17K to \$8K

💎 \$2M+ Product Revenue

Scaled FarEye Track, a real-time shipment visibility platform, from zero to 20+ enterprise clients

💎 \$70K Annual Map API Savings

self-hosted OSRM and Valhalla routing services, replacing paid Distance Matrix and Directions APIs across all regions