Vishal Kumar

Associate Director of Engineering | Distributed Systems, Cloud Infrastructure, ERP & AI Platforms | AWS Certified Solutions Architect - Professional

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PROFESSIONAL SUMMARY

Engineering leader with 10+ years of experience building distributed, multi-tenant SaaS and AI-driven platforms. Lead a 20-engineer organization at CapGrid and own the company's complete infrastructure, while staying hands-on as a ~50% individual contributor. Cut monthly cloud spend by ~86% (from ~$14K to ~$2K), secured a successful Big Four technology audit as sole technical owner, and reduced quotation turnaround from 45 days to 5 with LLM-driven automation. Run a platform serving 100K users at 5K-10K requests/sec with 99.9% uptime and sub-200ms latency.

CORE COMPETENCIES

- **Leadership & Strategy:** Engineering Leadership, Technical Strategy, Platform Roadmaps, Engineering Standards, Release Governance, Stakeholder Management, Mentoring, Agile (Scrum, Kanban), Sprint Planning
- **Architecture:** Distributed Systems, Event-Driven Microservices, Multi-Tenant SaaS, System Design, Scalability & Reliability, API Design, Database Sharding, LLM-Driven Automation
- **Cloud & Infrastructure:** AWS (EC2, Lambda, SQS, RDS, S3, Route 53, Cognito, CloudWatch), Cloud Cost Optimization (FinOps), Disaster Recovery, Security & Compliance Audits, Docker, Nginx, GitHub Actions, CI/CD, Observability, Azure, GCP
- **Backend & Data:** Node.js, TypeScript, Go (Golang), Express, Fastify, Hapi, REST, GraphQL (Apollo Federation), gRPC, WebSockets, PostgreSQL, MongoDB (Atlas Search, Triggers), DynamoDB, Redis, Elasticsearch, Firebase Firestore, ERPNext / Frappe, ETL (Hevo), Apache Superset, Jest, Test-Driven Development

PROFESSIONAL EXPERIENCE

Associate Director of Engineering
Oct 2025 - Present

CapGrid Solutions Private Limited | Gurugram, India

Promoted from Software Development Engineer 3. Lead a 20-engineer organization and own architecture, infrastructure and platform strategy for CapGrid's cloud manufacturing platform (supplier collaboration, pricing automation, order lifecycle), operating in the capacity of CPTO while remaining ~50% hands-on.

- Own and maintain CapGrid's complete infrastructure as its single technical owner.
- Reduced monthly cloud spend from ~$14K to ~$2K (~86%, ~$144K per year) by right-sizing over-provisioned resources, self-hosting databases, and removing unused services and data.
- Took CapGrid from a failed first independent technology audit to a successful Big Four audit the following year, as sole technical owner, by documenting workflows, writing technical policies and enforcing least-privilege access.
- Rebuilt the undocumented, years-old monthly requirement-planning engine in two iterations over 2-3 months, adding a built-in forecasting engine.
- Set up CapGrid's ERPNext / Frappe ERP from scratch and deployed it end to end on Docker, with custom apps and scripts on top of standard workflows; upgraded it from v14 to v16.
- Scaled the platform to 100K users and 5K-10K requests/sec with 99.9% uptime and sub-200ms API latency.
- Increased sprint delivery predictability from 60% to 85% through engineering-led requirement validation and structured backlog refinement.
- Cut pull request cycle time from ~3 days to 1 day with automated CI quality gates, static analysis and AI-assisted code review.
- Lowered production defect leakage by 35% by institutionalizing automated testing standards and release readiness criteria.
- Defined organization-wide release-governance and observability standards, and mentored senior engineers into technical leadership roles.

Software Development Engineer 3
Jul 2023 - Sep 2025

CapGrid Solutions Private Limited | Gurugram, India

- Architected an AI-driven order ingestion and workflow automation platform that cut sales quotation turnaround from 45 days to 5 (89% reduction) via automated document parsing, workflow orchestration and supplier matching.
- Built a multimodal AI ingestion engine for customer inputs from images, Excel files and messaging channels, eliminating manual data entry and reducing order misinterpretation.
- Engineered AI-powered specification extraction and part matching with ~90% straight-through acceptance, enabling automated price estimation for new manufacturing drawings.

- Designed a distributed, multi-tenant, event-driven backend on Node.js, Go, AWS (SQS, Lambda, EC2, RDS) and MongoDB (Atlas Search, Triggers) with asynchronous processing pipelines.
- Built CI/CD pipelines on GitHub Actions, designed the disaster recovery strategy, and developed a chatbot on a self-hosted Llama 3.2 model (Ollama) for conversational schedule ingestion.

Backend Engineer Aug 2022 - Jul 2023
Bondify B.V. | Rotterdam, Netherlands (Highly Skilled Migrant permit)

- Delivered the Template.io contract drafting engine MVP within two quarters through REST and GraphQL APIs and structured template-processing pipelines.
- Engineered modular backend services with over 90% automated test coverage, enabling reliable continuous delivery.
- Helped the company secure EU regional development (ERDF) funding for its contract-automation platform through the Kansen voor West III programme.
- Implemented AWS-based authentication and observability pipelines for real-time monitoring of service health, uptime and API latency.
- Defined API contracts and service boundaries with product and frontend teams, reducing integration friction and improving delivery predictability.

Backend Engineer Dec 2021 - Jul 2022
Jio Media Limited (Jio News) | Mumbai, India

- Led the backend re-architecture of Jio News (~5M active users, 12+ languages, 10M+ app downloads), migrating legacy services from Go to Node.js (TypeScript) within two months.
- Designed microservices for real-time publishing and personalized feeds with sub-200ms API latency under peak load.
- Optimized PostgreSQL schemas and queries, and strengthened code review and automated testing, reducing production incidents.

Software Engineer Aug 2020 - Nov 2021
The Lightning Group (formerly uCreate IT Pvt. Ltd.) | Mohali, India

- Built backend services for Moveable.uk, a multi-tenant, white-label home-moving and real-estate SaaS platform, with tenant-isolated data models and configuration-driven deployments.
- Developed tenant-aware React modules and strengthened CI/CD, automated testing and code review practices.

Software Engineer Jul 2018 - Jul 2020
Epitome Technologies Limited | Mohali, India

- Improved workforce scheduling efficiency by 70% on Novagems, a workforce management platform for security agencies, through automated guard assignment and real-time tracking.
- Built GPS tracking, geofencing alerts and automated payroll on event-driven Firebase Cloud Functions; served as sprint lead for planning and delivery coordination.

Junior Software Engineer Aug 2016 - Jun 2018
Igniva Infotech Private Limited | Mohali, India

- Developed REST APIs and reusable React Native components for food delivery, healthcare and EdTech products; won the Best Team Project award for the Chef Order platform.

PROJECTS & OPEN SOURCE

- **node22-pnpm-pm2-chromium (Docker):** multi-architecture (amd64/arm64) Node.js 22 base image with pnpm, PM2 and headless Chromium, published via GitHub Actions; 5,000+ Docker Hub pulls across its images.
- **claude-local-api (Go):** dependency-free HTTP service that runs the Claude Code CLI as a local API, with localhost-only access by default, isolated per-request workspaces, schema-validated JSON output and generated OpenAPI docs.
- **Fastify (open source):** merged contribution to fastify-rate-limit adding a custom rate-limit store example using Sequelize and PostgreSQL.

CERTIFICATIONS

AWS Certified Solutions Architect - Professional; AWS Certified Solutions Architect - Associate

EDUCATION

Bachelor of Technology, Computer Science and Engineering, University Institute of Engineering and Technology, Kurukshetra University, India | Aug 2012 - Jul 2016 | First Division

ADDITIONAL INFORMATION

Awards: Technical Architect Recognition, Jio Media Limited (backend architecture for Jio News)

Languages: English (professional), Hindi (native), German (learning)