

Dvip Patel

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SUMMARY

Full-stack engineer who works the entire stack, from Linux systems and networking up to production AI pipelines. Build resilient real-time monitoring software with hardware integration (RS485/COM, WiFi IoT) and solve complex concurrency bottlenecks across the JS/TS ecosystem and Python.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, SQL, Java, C/C++

Frontend: React.js, Next.js, Tailwind CSS, NextUI, Electron.js

Backend: Node.js, Express.js, Django, FastAPI, RESTful APIs, WebSockets

Databases: PostgreSQL, MongoDB, Redis, SQLite, Firebase Firestore

Systems & Networking: Linux (Arch/daily-driven), systemd, DNS, reverse proxies (Caddy), TLS, self-hosting

Tools & Platforms: Docker, AWS, Git, MediaMTX, FFmpeg, Serial Communication (RS485/COM)

EXPERIENCE

Trainee Software Engineer

Aug 2025 – Present

KVAR Technologies Pvt. Ltd.

Mumbai, India

- **CTS Logger**

- Engineered a dual-transport Electron.js/Node.js app to interface with industrial hardware via RS485/COM and WiFi/HTTP, polling 70+ concurrent devices.
- Designed an intelligent command queue with auto-deduplication to eliminate device lockups.
- Achieved 6 months of continuous production uptime with zero data loss across local on-premise deployments.

- **Andon Monitoring & AI Analytics**

- Co-built a React and Node.js monitoring system for Mahindra Aeronautics featuring admin-configurable multi-level role-based access control (RBAC).
- Integrated a Gemma-powered Text-to-SQL chatbot, secured by strict prompt design, destructive statement regex filtering, and a read-only database role scoped to whitelisted tables.
- Built a dynamic frontend engine to render the model's JSON output into responsive tables, line graphs, and donut charts based on user intent.

- **Real-Time Vision Pipeline**

- Architected a YOLOv8n object detection system for conveyor-belt monitoring, streaming 2 concurrent feeds via MediaMTX and FastAPI WebSockets at 97% accuracy.
- Built a custom StreamProfiler to track queue depth and encoding latency, optimizing thread bottlenecks to maintain a <50ms frame budget at 20 FPS.
- Engineered simulated RTSP test environments using FFmpeg and persisted tracking metadata with time-windowed SQL constraints.

Node.js Developer Intern

Dec 2023 – Mar 2024

Asynk Automating Technologies

Mumbai, India

- Built a **Firestore authentication system** that cut login latency by 30% for a customer-facing e-commerce platform.
- Designed **RESTful API endpoints** for product management, order processing, and user profiles, integrating Razorpay for seamless one-click checkout.

EDUCATION

Shree L.R. Tiwari College of Engineering

Mira-Road, Mumbai

Bachelor of Engineering in Electronics & Computer Science

Dec 2021 – May 2025

TECHNICAL WRITING

Personal Engineering Blog | blogs.dvippatel.in

2026

- Write production-architecture deep-dives, covering a secure Text-to-SQL bot and a real-time vision pipeline, plus a Git quick-start guide authored to onboard new engineering hires after noticing where they struggle.