

Saurabh Kulkarni

saurabhk201@gmail.com ✉ +91-8149306224 ☎ linkedin.com/in/piratedvirus

Technical Skills

Languages: TypeScript, JavaScript, C++
Frontend: React, Next.js, Redux Toolkit, RTK Query, Web Components, Shadow DOM, Micro-Frontend Architecture, Webpack Module Federation
Backend & Data: REST APIs, System Design, API Design, Authentication & Authorization, Multi-Tenancy, Prisma, PostgreSQL, MongoDB, Redis, Database Design, ORM, LLM Integration, OCR, Document/PDF/CSV Processing
Distributed Systems: NATS JetStream, WebSockets, Event-Driven Architecture, Microservices, Real-Time Data Synchronization, Caching
Testing & Engineering: Playwright, Cypress, Jest, Storybook, E2E Testing, API Testing
Blockchain: Consensus Mechanisms, Comparative Platform Analysis, Distributed Systems Security

Experience

Dell Technologies — Software Engineer (Bangalore, India) Aug 2023 – Aug 2026

Inventory Management & Infrastructure Platform

- Engineered high-performance virtualized data grids using **Custom Web Components (Shadow DOM), RTK Query, and dual-mode pagination**, enabling smooth interaction with **10,000+ assets** without UI degradation.
- Built scalable **real-time state synchronization** using Redux Toolkit and WebSocket delta updates, supporting **4,000+ concurrent live-sync connections** across multi-tenant environments.
- Integrated React workflows with **Go-based APIs and NATS JetStream** to enable Zero-Touch infrastructure provisioning (FDO), reducing customer onboarding time from **days to under 2 hours**.

Internal Full-Stack Platforms

- Architected and independently developed full-stack platforms using **Next.js, TypeScript, Prisma, and PostgreSQL**, designing modular REST APIs, authentication/authorization, and a **50+ entity relational data model** with indexing, constraints, and multi-tenant access patterns.
- Designed a **unified Redis caching architecture** with configurable TTLs, dynamic cache keys, dependency-aware and event-driven invalidation, and cache warming to reduce redundant database workloads and improve API responsiveness.
- Developed **React micro-frontends using Webpack Module Federation**, enabling independently developed capabilities to be seamlessly composed within shared application shells.
- Engineered **LLM/OCR and document-processing pipelines** integrating PDF/CSV processing, cloud services, storage, and external APIs, with persistent workflow state managed through PostgreSQL/Prisma.

Engineering Productivity & Quality

- Built and migrated a configurable **E2E testing framework from Cypress to Playwright**, supporting stubbed pre-merge and live post-merge API validation, environment-specific configuration, selective and tag-based test execution, Jenkins orchestration, and agent-assisted debugging.

Education

Birla Institute of Technology and Science, Pilani – M.E., Computer Science (CGPA: 7.2/10) 2021 – 2023
Government College of Engineering Aurangabad – B.E., Computer Science (CGPA: 6.8/10) 2015 – 2019

Academic Projects

Comparative Study of Blockchain Platforms Sep 2021 – Dec 2022

- Conducted a comparative technical study of **7 blockchain platforms**, evaluating consensus mechanisms, scalability, security, privacy, portability, and interoperability.
- Analyzed architectural trade-offs across heterogeneous blockchain ecosystems and evaluated approaches for addressing **scalability, privacy, security, and cross-chain interoperability**.
- Synthesized findings from technical literature and platform documentation into a structured comparative framework for evaluating blockchain architectures.