

# Kshitiz Raj

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## Education

<b>SRM Institute of Science &amp; Technology</b> <i>B.Tech in Computer Science &amp; Engineering (9.06/10 CGPA)</i>	2020-2024 Kattankulathur (Chennai), TN
<b>Delhi Public School</b> <ul style="list-style-type: none"><li>Class 12th (90.2%)</li><li>Class 10th (88.4%)</li></ul>	2011-2020 Bokaro, JH

## Experience

<b>Barclays Bank PLC</b> <i>Software Engineer-BA4</i>	March 2025 – Current Pune, MH
<ul style="list-style-type: none"><li>Optimized the <b>codebase</b> to reduce <b>server overhead by 20%</b>, leading to a <b>15% improvement</b> in <b>page load times</b> and overall <b>application performance</b>.</li><li>Re-engineered the <b>export report system</b> used across the application to reliably generate <b>PowerPoint</b> and <b>Excel</b> reports, resolving <b>critical failures</b> and improving <b>reporting efficiency</b>.</li></ul>	
<i>Technical Graduate Developer-BA3</i>	July 2024 -Feb-2025 Pune, MH
<ul style="list-style-type: none"><li>Built a predictive ML model (96% accuracy, 91% precision) using <b>XGBoost</b> and <b>LightGBM</b> to forecast project health (Red/Amber/Green), reducing false “Red” alerts.</li><li>Reduced model training time by 63% through optimized pipelines, parallel processing, and TF-IDF-based NLP risk extraction from project manager comments.</li><li>Designed a scalable microservices architecture with <b>WebSocket</b>-based pub/sub for real-time project status updates on interactive dashboards.</li></ul>	
<i>Summer Intern-BA3</i>	June 2023 -Aug-2023 Pune, MH
<ul style="list-style-type: none"><li>Developed Python-based automation tools for server-side management, saving 5 hours of manual work per week.</li><li>Built real-time monitoring dashboards on the <b>ElasticSearch (ELK)</b> platform and implemented automated alerts using <b>ElasticSearch Watchers</b> for critical system events.</li><li>Collaborated with the Portfolio Project Management team to deliver actionable, data-driven insights that improved operational visibility.</li></ul>	
<b>Samsung Prism</b> <i>Research Intern</i>	Dec 2022 – Jul 2023 Remote
<ul style="list-style-type: none"><li>Researched <b>Blockchain</b> and <b>Non-Fungible Tokens (NFTs)</b> for anti-counterfeiting applications in supply chain systems.</li><li>Developed and deployed <b>smart contracts</b> to ensure product authenticity and traceability on blockchain networks.</li><li>Applied <b>cryptographic principles</b> to secure digital assets and validate product legitimacy in decentralized environments.</li></ul>	

## Projects

<b>WorkSync</b>   <i>TurboRepo, Express, Kafka, PostgreSQL, Prisma, Supabase, Next.js, ShadCN</i>	May 2025 – On-Going
<ul style="list-style-type: none"><li>Engineered a <b>modular, event-driven automation platform</b> allowing users to define custom workflows triggered by real-time events.</li><li>Implemented complex automation actions such as <b>Solana token transfers, email alerts, and push notifications</b>, driven by dynamic user-defined inputs.</li><li>Built a <b>Kafka-based event pipeline</b> to enable scalable, resilient task orchestration across distributed services.</li><li>Designed a <b>PostgreSQL + Prisma backend</b> with Supabase Auth for secure, multi-tenant workflow isolation and access control.</li><li>Developed a responsive frontend with <b>Next.js and ShadCN UI</b>, focusing on accessibility and seamless UX.</li></ul>	

- Designed **API server architecture** to isolate user interactions from the **trading engine core**.
- Utilized **Redis pub/sub** and **queue model** for data transfer to the trading engine with **FIFO ordering**.
- Containerized with **Docker Compose**, orchestrating **TimescaleDB (PostgreSQL)** and **Redis**.
- Implemented real-time **WebSocket updates** for market data and interactive trading charts.
- Developed a **market maker bot** to simulate realistic market volatility and ensure liquidity.

- Developed a **real-time collaborative music platform** enabling users to listen to and manage music in shared rooms.
- Created a **custom dashboard** for room creators to embed YouTube videos, manage users, and curate playlists with **vote-based ordering**.
- Integrated **Google OAuth2 using NextAuth.js**, securely managing user sessions with Prisma and PostgreSQL.
- Optimized backend APIs for low-latency updates and containerized the app with Docker for reproducible deployments.
- Deployed via Vercel with **CI/CD pipelines** for seamless updates and zero-downtime rollouts.

*More projects available at: [kshitizraj.com](https://kshitizraj.com)*

## Technical Skills

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**Languages:** TypeScript, JavaScript, Python, C++, Rust

**Backend:** Node.js, Express.js, REST APIs, WebSockets, gRPC, Kafka

**Frontend:** React.js, Next.js, Tailwind CSS, HTML/CSS, Recoil.js

**Databases:** PostgreSQL, Redis, MySQL, SQL Server, MongoDB, Prisma ORM, Supabase

**Cloud/DevOps:** Docker, AWS (EC2, S3), Vercel, Cloudflare, Git

**Data Science:** XGBoost, LightGBM, RandomForest, RNN, NLP, TensorFlow, Pandas

**Other Skills:** OAuth 2.0, JWT, WebRTC, Real-time Systems, CI/CD

## Certifications

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- **Barclays** – Gen AI Digital Credential
- **100xDevs Full Stack Development** – Levels 0–1 & 1–100
- **NPTEL** – Data Science for Engineers
- **Red Hat** – Enterprise Linux Fundamentals
- **Quark Projects** – Blockchain & MATLAB for Robotics