

BHUPESH VERMA

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EDUCATION

Bachelor of Technology in Computer Science

Shri Shankaracharya Technical Campus, Bhilai

Oct 2022 – May 2026

CGPA: 8.1/10

PROJECTS

Perps Exchange Platform (*Next.js, TypeScript, Express.js, PostgreSQL, Redis Streams, Docker, WebSockets*) [Demo](#) | [GitHub](#)

- Built a **distributed perpetual futures exchange** using a **microservices architecture** with Express.js, PostgreSQL, Redis Streams and Docker.
- Designed a **price-time priority matching engine** supporting market orders, limit orders, isolated margin, leverage, real-time P&L calculation and liquidation.
- Implemented an **event-driven communication pipeline** using Redis Streams for reliable service-to-service messaging and order execution.
- Developed a **WebSocket gateway** to stream live order books, trades, balances, positions and order updates with sub-second synchronization.
- Containerized the platform using Docker for reproducible local development and simplified deployment.

Better Uptime — Website Monitoring Platform (*Next.js, TypeScript, Express.js, PostgreSQL, Prisma, Docker*) [Live](#) | [GitHub](#)

- Built a **website uptime monitoring platform** that periodically checks website availability and records response metrics.
- Designed a **distributed worker architecture** where background workers continuously process monitoring jobs and update website health status.
- Implemented **scheduled health checks**, response time tracking, failure detection and historical uptime records using PostgreSQL, Prisma and Docker.

Droply — Secure File Storage Platform (*Next.js, TypeScript, Drizzle ORM, Clerk*) [Live](#) | [GitHub](#)

- Built a **secure cloud file-storage platform** using Next.js App Router with Clerk authentication.
- Integrated **ImageKit CDN** for optimized image delivery, secure uploads and media management.
- Implemented **file organization workflows** including search, starred, trash, restore and permanent deletion.

Sketchly — Collaborative Whiteboard (*Next.js, WebSockets, HTML5 Canvas*) [Live](#) | [GitHub](#)

- Built a **real-time collaborative whiteboard** allowing multiple users to draw simultaneously using WebSockets.
- Implemented drawing tools including brush, shapes, eraser, color picker and canvas interactions using the **HTML5 Canvas API**.
- Designed a responsive interface optimized for desktop and mobile devices with low-latency collaborative updates.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript

Frontend: React.js, Next.js, HTML5, CSS3, Tailwind CSS, shaden/ui

Backend: Node.js, Express.js, REST APIs, WebSockets

Databases: PostgreSQL, MongoDB, Redis, Prisma, Drizzle ORM

DevOps & Cloud: Docker, Docker Compose, GitHub Actions, AWS EC2

Authentication & Security: JWT, OAuth 2.0, Clerk, Bcrypt