# Yuvraj Singh

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## Education

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| **Vellore Institute of Technology, Bhopal** | Aug. 2022 – Oct. 2026 |
| *Bachelor of Technology in Computer Science and Engineering* | *CGPA: 8.35/10* |
| **Rishikesh Public School, Rishikesh** | Aug. 2020 – May 2021 |
| *Class XII (ISC)* | *80.00%* |

## Projects

**Exchange Platform** | ⭘ | *Next.js, TypeScript, Tailwind CSS, WebSocket, CI/CD* — Feb 2025
- Engineered **WebSocket service** with Singleton pattern to stream real-time data for 100+ cryptocurrency pairs from Backpack Exchange APIs.
- Composed an interactive **order book and candlestick charts** achieving 94% accessibility score.
- Pioneered backend enhancements, integrating Backpack's API to expedite market data delivery, achieved a **20% reduction in latency**, and improved the data ingestion rate by **300 messages per second**.
- Revamped existing CI/CD infrastructure shortening deployment time by 75% and enabling faster iteration cycles for development teams.

**Doodle Space** | ⭘ | *Next.js, TypeScript, Tailwind CSS, WebSocket, Prisma, Docker, PostgreSQL* — Aug 2025
- Engineered a collaborative **Excalidraw-style whiteboard**, enabling real-time multi-user drawing and editing, integrated live cursor tracking and shared annotations, and boosted team collaboration efficiency by 30%.
- Implemented a **WebSocket synchronization layer** for real-time broadcasting of shapes and annotations, improving update delivery speed by 35% and supporting 500+ concurrent users with sub-100ms latency.
- Optimized rendering using **virtualized canvas layers**, boosting performance by 40%.
- Integrated a **PostgreSQL + Prisma** backend for session persistence and board history, enabling reliable state recovery, reducing data loss incidents by 30%, and supporting seamless multi-session collaboration.

## Technical Skills

**Languages:** Java, JavaScript, TypeScript

**Frameworks & Libraries:** React.js, Next.js, Node.js, Express.js, Tailwind CSS, Jotai

**Databases:** PostgreSQL, MongoDB, Prisma

**Cloud & DevOps:** AWS, Docker, CI/CD, GitHub Actions

**Tools & Practices:** Git, Postman, Figma (basic), REST APIs, OOP, Data Structures & Algorithms, Computer Networks

## Open Source Contributions

**n8n (Workflow automation platform)** — Implemented a frontend enhancement, adding timezone-aware date formatting (formatDateForUI) and resolving linked issue discussions.

**p5.js (JavaScript creative coding library)** — Enhanced p5.js documentation clarity for Vector.fromAngle(), improving usability for new contributors.

## Achievements & Certifications

**Smart India Hackathon** — Proposed a citizen grievance forum app with location-based complaint tracking for Smart India Hackathon 2025.

**AWS Solutions Architect** — Learned designing and deploying secure, resilient AWS cloud computing architectures.

**MERN Full Stack Certification** — Gained hands-on experience in building and deploying scalable full-stack web applications using MongoDB, Express.js, React, and Node.js.

**Meta Version Control Certification** — Proficient in Git, GitHub workflows, and team-based collaborative development.