

# Raj Mane

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## EDUCATION

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**St. Francis Institute of Technology**

*Bachelor of Engineering*

Borivali, Mumbai

*Aug 2023 – June 2027*

## PROJECTS

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### Hexatalk (Backend) |

- Developed a scalable real-time chat backend using Node.js, Express, WebSocket (ws), and MongoDB, supporting one-to-one and group messaging with delivery synchronization.
- Implemented offline message persistence with automatic synchronization on reconnect, improving message delivery reliability by 40%.
- Designed and deployed Docker and Docker Compose-based infrastructure, reducing local setup time from hours to under 5 minutes.
- Built and published production-ready Docker images to Docker Hub, enabling consistent deployments across environments.
- Integrated CI workflows for automated builds and validations, improving development velocity and reducing manual errors by 30%.
- Implemented friend request notifications and connection management with secure, middleware-level validations.
- Adopted a clean, modular folder structure to improve code maintainability and enable scalable feature development.

### AlgoCode (Backend) |

- Built a scalable LeetCode-style coding platform backend using Node.js, PostgreSQL, and Prisma ORM to evaluate and validate algorithmic submissions.
- Integrated the Judge0 API for real-time code execution across multiple programming languages, efficiently handling concurrent submissions.
- Implemented Redis for caching frequently accessed problems and managing background queues, reducing API response time by 45%.
- Containerized the backend using Docker to ensure environment consistency and reduce onboarding setup time to under 5 minutes.
- Designed secure REST APIs for authentication, problem management, and submission tracking with strict schema and middleware-level validations.
- Followed a service-based, modular architecture to enhance maintainability and support future feature scalability.

## TECHNICAL SKILLS

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**Programming Languages:** HTML/CSS, JavaScript, TypeScript, C++

**Frontend Technologies:** React.js, Next.js, Tailwind CSS

**Backend Technologies:** Node.js, Express.js

**Databases:** MongoDB, PostgreSQL

**Authentication:** Clerk, JWT

**Tools:** Git, GitHub, AWS, VS Code, Cursor, Postman, Requestly, Turborepo

**Libraries:** React Hook Form, TanStack Query, Redux, WebSocket, Zod, Prisma (ORM), Motion

## ACHIEVEMENTS

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**Activities:** Worked as a Design Executive in ITSA and IIC

**Certifications and Training:** Cohort 3.0 — Web Development (by Harkirat Singh), Namaste React

**DSA:** Completed Arrays, Binary Search, and Linked Lists from Striver's Sheet

**Entrance Exam:** Scored 96 percentile in the Engineering Entrance Examination