

Himanshu Raj

EDUCATION

Chandigarh University

Bachelor of Engineering in Computer Science [2023 – 2027]

Gharuan, Punjab

CGPA : 8.30

College of Commerce, Arts & Science

Intermediate (BSEB) [2022]

Patna, Bihar

Percentage : 83%

TECHNICAL SKILLS

Languages: C/C++, Java, JavaScript, Typescript, Python, SQL

Frontend: React, React Native, HTML, CSS, Tailwind, Material Design

Backend: Node.js, Express.js, FastAPI, Prisma, Flask

Tools & Technologies: Docker, Git, GitHub Actions, WebRTC, Matrix Protocol, Firebase, MongoDB, Nginx, JWT

Libraries: scikit-learn, pandas, NumPy, matplotlib, seaborn

PROJECTS

The Discovery Engine | *FastAPI, PostgreSQL, Redis, React, scikit-learn* | [Github](#)

July 2026 – Present

- Built **recommendation pipeline** using **pandas** and **scikit-learn** to mine historical interaction data, uncovering **latent user-taste patterns**
- Designed **FastAPI** and **PostgreSQL** backend with **Redis caching** to serve **ML-driven recommendations** in real time, cutting response latency by 86%
- Connected pipeline to **React** front-end, delivering **personalized recommendations** through a **real-time, consumer-facing interface**

Nekowise | *React, Node.js, WebRTC, MongoDB, Express.js* | [Github](#) | [Video Demo](#)

July 2025 – Dec 2025

- Architected **peer-to-peer video conferencing** platform with **WebRTC mesh topology**, supporting 6 concurrent participants with **sub-200ms latency**
- Implemented adaptive bandwidth management (150kbps-2.5Mbps) with **STUN/TURN NAT traversal** and **RTCRtpSender APIs** for connection monitoring
- Built **Material Design 3 UI** with video grid, screen sharing, device selection, real-time chat, and **JWT authentication**
- Containerized full-stack application with **Docker Compose** and deployed **CI/CD pipeline** using **GitHub Actions** for automated testing and deployment

Textbean | *React Native, Matrix Protocol, SQLite, Node.js, Firebase* | [Github](#) | [Video Demo](#)

June 2024 – Nov 2024

- Built **unified messaging platform** using **Matrix protocol bridges** for WhatsApp, Telegram, Discord, and SMS, consolidating conversations into single interface
- Implemented **real-time WebSocket synchronization**, **SQLite offline storage**, full-text search, and **Firebase push notifications** with quick reply actions
- Developed **React Native mobile app** with threaded messages, rich media rendering, swipe actions, **biometric authentication**, and background sync

EXTRACURRICULAR ACTIVITIES

Competitive Programming

- Solved **300+ Data Structures and Algorithms** problems across LeetCode, Codeforces, and CodeChef, focusing on problem-solving and optimization.

Smart India Hackathon – Participant

- Participated in Smart India Hackathon, collaborating with a team to develop innovative solutions for **Travel & Tourism Domain**

CERTIFICATIONS

- Google Cloud Certified Developer** (2025)
- NPTEL Cloud Computing – Elite + Silver** | IIT Kharagpur (2025)
- Meta Database and SQL Certification** (2024)