

# PREM CHARAN PAMPANA

☎ +91 8247897613 ✉ [premxcharan@gmail.com](mailto:premxcharan@gmail.com) in [LinkedIn](#) 🐙 [GitHub](#)

## Education

IIITDM Jabalpur

B.Tech in Computer Science Engineering

Dec 2021 – Aug 2025

Madhya Pradesh, India

## Relevant Coursework

- **Computer Science:** Operating Systems, Data Structures, DBMS, Artificial Intelligence, Machine Learning, Networking

## Technical Skills

**Programming Languages:** Python, Java, JavaScript, TypeScript, SQL

**Frameworks & Libraries:** React.js, Node.js, Next.js, TailwindCSS, Shadcn

**Database Management:** PostgreSQL, MongoDB, MySQL, Prisma

**Development & Tools:** Git, Bash, Postman

## Experience

Cognizant Technology Solutions

Dec 2025 – Present

Programmer Analyst Trainee

Chennai, India

- **Java Backend Development:** Developing scalable Spring Boot services for omnichannel retail management and optimizing complex SQL queries for inventory tracking analytics.
- **System Integration:** Implementing secure JWT authentication for RESTful services while collaborating in Agile sprints to integrate full-stack React ecosystem features.

Fusion - Institute ERP

Dec 2023 – Aug 2024

Backend Engineer

- **API & Role Management:** Architected 15+ RESTful APIs and a role-based access control system for 4 user types, reducing processing time by 40%.
- **Medical Management:** Developed modules for doctor scheduling, health records, and inventory for 500+ medicines, 100+ beds.
- **Dashboard Reliability:** Integrated report generation and announcement logic with robust error handling and logging.

## Projects

Beam – Real-Time Video Calling App

[Live Demo](#)

React, TypeScript, Node.js, WebRTC, WebSocket, GCP

- **Peer-to-Peer Video Calling:** Engineered a multi-participant WebRTC mesh architecture with a custom WebSocket signaling server, enabling low-latency real-time audio/video calls across browsers.
- **Network Resilience:** Implemented STUN/TURN relay fallback for NAT traversal on restrictive networks and a reconnect protocol with session grace periods to survive dropped connections.
- **Access Control & Deployment:** Built a host-approval join flow with shareable room links, deploying the signaling server on a Google Cloud VM behind a Caddy reverse proxy with automated TLS.

Parallel MergeSort Algorithm

C++, Multithreading, pthreads

- **Algorithm Design:** Constructed high-performance parallel merge sort achieving 14x speedup compared to sequential implementation on datasets ranging from  $10^6$  to  $10^8$  elements.
- **Performance Optimization:** Optimized thread management and memory allocation, reducing overhead.
- **Multithreading Expertise:** Demonstrated proficiency in pthreads with mutex-based synchronization, achieving thread-safe operations across 50+ test cases.

Brainly - Your Second Brain

[Live Demo](#)

React, TypeScript, Node.js, MongoDB, Tailwind CSS

- **Full-Stack Development:** Developed React SPA with 10+ TypeScript components and Express backend for organizing tweets, YouTube videos, and Google Docs with embedded previews.
- **Authentication & CRUD:** Established secure JWT authentication system implementing full CRUD operations with responsive masonry layout and real-time content filtering.
- **Production Deployment:** Deployed on Vercel/Render with MongoDB Atlas, implementing 8 RESTful API endpoints.

## Achievements

**Competitive Coding:** Solved 400+ complex algorithmic problems across LeetCode, Codeforces platforms.

**LeetCode Rating:** Achieved peak rating of **1670**, placing in the top **10%** globally.

## Volunteer Experience

**Tech Mentor, Code for Good:** Mentored 15+ students in web development and competitive programming, organizing 5+ workshops and hackathons.