MANAS AGARWAL

MERN Stack Developer & Competitive Programmer

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Education

Bachelor of Technology in Computer Science and Information Technology   **7.85 CGPA** , 2022 - 2026
Dr. A.P.J. Abdul Kalam Technical University

Senior Secondary (CBSE)   **92.2%** , 2021 - 2022
Saraf Public School

Work Experience

Educase India, *Backend Intern*   Mar 2025 – Jun 2025

- Implemented features in the **School ERP Software** to manage franchise operations, multi-school data, fee tracking, staff and student records.
- Developed and tested **RESTful APIs in Node.js**, debugging and reviewing code to fix **25+ critical bugs** and **70+ minor bugs**, enhancing backend stability and performance.
- Optimized **SQL queries** and **database indexing**, reducing query execution time by **20-30%** and improving API performance.

Position of Responsibility

Programming Club, AKGEC   College Society
Coordinator   Feb 2024 – Present

- Programmed a scalable website for the **Programming Club** as part of a team, achieving **5000+** viewership.
- Collaborated with a team of 40+ peers to organize and conduct Data Structures and Algorithm workshops in C++, tutoring 150+ junior students in data structures.

Technical Projects

Chess Master | *WebRTC, Socket.io, Sequelize ORM, PostgreSQL* | ⌂ Github | 🚀 Video Demo | ⎇ Site Link

- Built a real-time **WebRTC signaling server** in **Node.js** and **React.js** to support live voice chat enabling players to share strategies for mastering chess, serving over 100 players.
- Designed a **match history module** using **PostgreSQL** to store move histories and React.js components for interactive analysis, enabling players to review and annotate past matches.
- Implemented an **Elo-inspired rating algorithm** to adjust player ratings based on match outcomes and opponent ratings, ensuring accurate reflection of player skill.
- Integrated OAuth 2.0 with **Passport.js** for secure login and used **Socket.io** for real-time connections between players and friends.

VStream | *React.js, Redux Toolkit, Node.js, Express, MongoDB* | ⌂ Frontend | ⌂ Backend | ⎇ Site Link

- Designed and developed a **unified video and music streaming platform** using **MERN stack**, offering seamless media consumption in a single interface.
- Optimized backend performance with **MongoDB Aggregation Pipelines**, achieving 30–50% faster data processing, and engineered efficient **pagination** for 70% faster fetch times.
- Integrated **PayPal** payment gateway for secure premium transactions and configured **JWT authentication** with **OTP-based email verification** for user registration.
- Built a responsive and modular front end using **React.js**, **Redux Toolkit** for state management, and **Tailwind CSS** for modern UI.

Awards & Achievements

- **Knight** at Leetcode manas_agarwal16, **Pupil, 1342** at Codeforces manas_agarwal16, **3 Star** at Codechef manasagarwal19
- Solved **500+** problems on **Data Structures and Algorithm** and **600+** problems on **Competitive Programming.**
- Achieved **1st rank** among 350+ participants in the DSA contest and **2nd rank** among 300+ participants in the Competitive Programming contest at Ajay Kumar Garg Engineering College.

Technical Skills

Programming Languages: C, C++, JavaScript, SQL, TypeScript
Technologies and Frameworks: React.js, Redux Toolkit, Node.js, Socket.io, WebRTC, Sequelize ORM, Prisma ORM
Databases and Cloud: MongoDB, MySQL, PostgreSQL, Vercel, Render
Tools: MySQL Workbench, pgAdmin 4, Visual Studio Code, GitHub Desktop, Postman