

Madhav Mahajan

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Education

Thapar Institute of Technology and Engineering

B.E in Computer Engineering (CGPA: 8.35)

Expected June 2026

HOLY HEART PRESIDENCY SCHOOL

10 +2 Non - Medical (Note: 93.4/100)

Passed - 2022

HOLY HEART PRESIDENCY SCHOOL

10 (Note: 92.8/100)

Passed - 2020

Experience

HealthArc

Frontend Developer

Feb 2025 – Apr 2025

Remote

- Redesigned and developed the frontend of the company's website by converting legacy PHP codebase into a modern React architecture.
- Integrated Deepgram API for real-time speech-to-text functionalities as part of a new feature rollout.
- Built a proof-of-concept (POC) for Shopify integration to streamline product listings and payment processing.

Alumni Relation Cell, Thapar Institute

Full-Stack Developer

Sep 2024 – Feb 2025

Patiala, India

- Designed and developed **ThaProt-G** (thaprotg.thapar.edu) from scratch — a professional networking platform for Thapar students and alumni.
- Implemented user authentication, dynamic dashboards, messaging, and project showcasing features using **React.js**, **Express.js**, and **PostgreSQL**.
- Built a scalable backend with RESTful APIs and integrated PostgreSQL for handling user data, project uploads, and alumni connections.
- Collaborated with multiple stakeholders to ensure a clean UI/UX and deployed the full-stack application to production with a custom domain.

Projects

ThaProt-G | React, Express.js, Node.js, PostgreSQL

ThaProt-G

- Developing a web application to bridge the gap between students and alumni by enabling project collaboration and funding opportunities.
- Implementing a multi-interface system for students, alumni, and a permitting committee to regulate access to projects and postings.
- Integrating filters for alumni search, project showcases, and college updates to enhance user engagement.

Software Fault Prediction System | Python | GitHub

- Leading the development of a machine learning-based system for predicting software faults.
- Designing and implementing an intuitive graphical user interface to enhance user experience.
- Aims to significantly improve software reliability and maintenance by enabling early fault detection.

Healthcare Multilingual Assistant | Node.js, Express.js, Deepgram API, Socket.io, Bootstrap | GitHub

- Built a real-time multilingual speech-to-text and translation web app to assist healthcare providers in communicating with patients across 12+ languages.
- Integrated Deepgram API for accurate live transcription and implemented bidirectional translation with optional Google Cloud Translation API support.
- Enabled audio recording, file uploads, and conversation history tracking with a responsive UI and real-time updates using Socket.io.

- Developed RESTful API and WebSocket endpoints to handle transcription, translation, and audio streaming efficiently.

Voting System with Fraud Detection | C++, STL

- Designed a CLI-based voting system using hash maps, sets, and vectors to enforce one vote per user and ensure O(1) fraud detection.
- Implemented real-time vote statistics, ASCII-based result visualization, and sorted leaderboard generation.
- Built a fraud detection module to log duplicate votes with timestamps and generate detailed admin reports.
- Applied custom sorting and input validation techniques, reinforcing core DSA concepts without external libraries.

EXTRACURRICULAR EXPERIENCE

ALUMNI RELATIONS CELL

Jan 2024 – Present

Head of Technical and Management Team

Thapar Institute of Engineering and Technology

- Designed engaging user interfaces and developed a single-player **Mines** game to enhance user engagement.
- Currently leading the development of the official website for the cell to streamline alumni-student interactions.

SATURNALIA

Sept 2024 – Present

Head of Technical Department

Thapar Institute of Engineering and Technology

- Led the technical team for Saturnalia, the largest techno-cultural event at Thapar, ensuring seamless execution of all technical aspects.

TECHNICAL SKILLS

Programming Languages: Python, C/C++, SQL (PostgreSQL), JavaScript, HTML, CSS

Development Frameworks & Libraries: React.js, Express.js, JQuery, Bootstrap, Node.js

Developer Tools: Git, VS Code, PyCharm, Jupyter Notebook, PostgreSQL

Proficient In: Data Structures, Algorithms, Back-End Technologies, Machine Learning, Object-Oriented Programming

SOFT SKILLS

Team Collaboration, Creativity, Adaptability, Communication, Initiative, Ownership, Curiosity, Open-Mindedness, Positive Attitude, Problem-Solving