# Anoop Tripathi

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## Education

**Dr. B R Ambedkar National Institute of Technology Jalandhar** *Aug 2024 – Present*
Bachelor of Technology in Information Technology — CGPA: 8.09 *Jalandhar, Punjab*
Second Year(3rd Semester)

## Projects

**StudyOne** — *Github*
*Tech stack : React, Node.js, Express, MongoDB, Tailwind CSS, Chrome Extension APIs, JWT*

- Designed and developed a full-stack learning management platform enabling users to organize courses, modules, notes, flashcards, and study materials with progress and deadline tracking.
- Built a responsive React frontend using Tailwind CSS, implementing features such as spaced-repetition flashcards, rich-text note editor, file viewer, and dark/light theme toggle.
- Engineered a secure RESTful backend with Node.js and Express, implementing JWT-based authentication, file uploads, CRUD operations across multiple resources, and optimized MongoDB queries using indexing.
- Added a Chrome extension for real-time webpage bookmarking and synchronization with the main application, ensuring seamless cross-platform data consistency.

## Extracurriculars

**Bharatiya Antariksh Hackathon 2025** *July 2025*
*Problem Statement : Monitoring Air Pollution from Space, by an integrated approach using satellite observations, ground-based measurements, reanalysis data, and AI/ML techniques*

- Proposed an AI-driven, end-to-end system for nationwide air pollution monitoring by integrating satellite AOD data, ground-based PM2.5/PM10 measurements, and atmospheric reanalysis to estimate pollution levels in regions without physical sensors.
- Designed a scalable architecture enabling Pan-India pollution heatmaps, time-series analysis, and short-term forecasting, with insights delivered through a conceptual Streamlit-based interactive dashboard for public health and policy use.

**Smart India Hackathon(SIH) 2025** *Sep 2025*
*Problem Statement : Disaster Preparedness and Response Education System*

- Proposed a digital disaster preparedness platform for schools and colleges, integrating gamified learning modules, region-specific alerts, virtual drills, and real-time communication to improve emergency readiness.
- Designed a scalable system architecture combining a Flutter-based mobile app, Next.js/Express admin dashboard, and ML models (Random Forest/LSTM/CNN) using ISRO, IMD, and CWC data to enable localized risk prediction and preparedness tracking.

## Technical Skills

**Programming Languages:** C++, C, Python, JavaScript
**Web Development:** React.js, Next.js, Node.js, Express.js, Tailwind CSS
**Databases & Platforms:** MongoDB
**DevOps & Tools:** Docker, Git, GitHub
**Core Concepts:** Data Structures and Algorithms, OOP, DBMS, AI/ML