

Ansh Madaan

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Education

Thapar Institute of Engineering and Technology

Aug 2023 – May 2027

B.E. Computer Science, CGPA: 9.16/10

Experience

Summer Intern, TIET ELC (Experiential Learning Centre)

Jun 2025 – Jul 2025

Python, Scikit-learn, EEG Signal Processing, Grad-CAM, Integrated Gradients

- Preprocessed **16-channel EEG** recordings and **benchmarked 7 classical ML baseline models** for schizophrenia detection, evaluating each on accuracy against a held-out subject-wise split.
- Designed a hybrid **CNN–LSTM with attention** reaching **97% accuracy (84 subjects, subject-wise split)**, systematically compared against CNN/LSTM-only baselines, improving accuracy by **6–9%**.
- Validated** model predictions using **Grad-CAM** and **Integrated Gradients** to verify learned patterns matched expected clinical signal, documented results in a **paper accepted at ICSDP 2025**.

Projects

Career Ops - AI-Powered Job Discovery Platform

Live | Source

Python, FastAPI, Supabase (PostgreSQL), React, Google Gemini API, TOPSIS

May 2026 – Jul 2026

- Engineered a **FastAPI RESTful backend** aggregating **6,000+ live listings** from three ATS providers (Greenhouse, Lever, Ashby) and Internshala, ranked by a **TOPSIS** multi-criteria scorer across salary, seniority, and location fit.
- Integrated the **Gemini API** within an LLM pipeline (with **Pydantic**) to parse raw resumes into schema-validated profiles, cutting profile setup time by **70%** against manual entry.
- Implemented a real-time multi-source **scraping pipeline**, plus **AI resume tailoring** and ATS-optimized PDF export.

Thapar University Time Table Portal

Live | Source

React, Vite, Python (openpyxl), JSON, Vercel

Jan 2025 – Aug 2025

- Shipped a **React + Vite** portal serving **10,000+ students**, replacing PDF lookups with instant course search.
- Automated a **Python (openpyxl)** ETL normalizing **50,000+ Excel rows** into a static JSON index each semester.

Personal Portfolio - Explorable 3D Developer Portfolio

Live | Source

React, Three.js, React Three Fiber, LangChain, RAG, Gemini API, Vercel

Jul 2026 – Sep 2026

- Built a **RAG** FAQ bot over a 54-chunk corpus (**LangChain, Gemini**) at **94% recall** on a custom eval harness.
- Cut **725 KB** from first paint via code splitting in a React/**Three.js** portfolio with roamable Blender worlds.

Multi-Agent Researcher - Autonomous Research Pipeline

Source

Python, LangChain, LangGraph, Gemini API, Tavily, BeautifulSoup

Sep 2026 - Sep 2026

- Built a four-stage **LangGraph** pipeline where search and scraper agents feed self-scoring writer and critic chains.
- Wrote custom **Tavily** search and **BeautifulSoup** scraping tools with timeouts and soft-fail error handling.

Technical Skills

Languages: C/C++, Python, SQL, JavaScript, HTML/CSS

Frameworks & Libraries: React, Vite, FastAPI, Three.js, React Three Fiber, Scikit-learn, PyTorch

AI & Agents: Google Gemini API, LangChain, LangGraph, RAG, LLM Pipelines, Prompt Engineering

Databases & Infrastructure: PostgreSQL, Supabase, REST APIs, Vercel, Git, GitHub, Postman

Relevant Coursework: Data Structures & Algorithms, OOP, DBMS, Operating Systems, Computer Networks, Machine Learning, LLD, HLD

Leadership Experience

General Secretary, ACM Student Chapter, Thapar Institute

Aug 2025 – Aug 2026

- Led a **200+ member** chapter across Technical and Management domains, overseeing internal software projects.
- Ran workshops, coding contests, and hackathons reaching **5,000+ students**.

Team Lead, Saturnalia (Techno-Cultural Fest, TIET)

Sep 2025 – Nov 2025

- Coordinated committees, administration, and vendors across a **3-day fest** drawing **15,000+ attendees**.

Achievements & Honors

- Solved **850+ LeetCode problems** covering Dynamic Programming, Graphs, Trees, and Advanced Data Structures.
- Co-authored research paper on EEG-based schizophrenia detection accepted at **ICSDP 2025**.
- Earned **Merit Scholarship** for outstanding academic performance, ranking in the **Top 10%** at TIET.