Mankirat Singh

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EDUCATION

Thapar Institute of Engineering and Technology, Patiala — *2026*
B.E Computer Engineering — CGPA: 8.06

Dayanand Public School, Nabha — *2022*
PCM, CBSE, Nabha — Percentage: 90.3%

EXPERIENCE

Full Stack Developer Intern *July 2024 - September 2024*
Storoo — Remote
- Established role-based authentication with unique functionalities using NextJS and Postgres SQL.
- Deployed on AWS EC2 with Docker, NGINX, blue-green deployment strategy, and GitHub Actions.

Student Research Intern *January 2024 - Present*
Thapar Institute of Engineering and Technology — On-site
- Implemented various constraints for a Genetic Algorithm based Time-Table scheduling system for 500+ courses.
- Optimized database structure and used FastAPI for efficient data flow between frontend and algorithm.

Flutter Developer *June 2023 - October 2023*
Teraforge Digital Lab — Remote
- Developed a mobile app for a social media startup with content posting and profile management.
- Built with a team of 3 using Flutter and Material UI for design, with Firebase supporting the backend.

PROJECTS

LUNAR (React, ThreeJS, YOLOv5, U-Net Image Segmentation) *August 2024*
Detection of Safe Navigation Routes on Moon for rovers based on Chandrayan 2 Data — Project Link
- Processed and geo-referenced Chandrayaan-2 images to create a 3D moon surface using Three.js.
- Analysed IIRS spectral data to identify top 10 points of interest for research using Anomaly Detection.
- Honored by the President of India as National Winners of BAH hosted by ISRO on 1st National Space Day.

Feedback App TIET (Flutter, NextJS PHP, MySQL) *December 2024*
App to seamlessly collect and manage student feedback for teachers. — Project Link
- Built a Flutter frontend with PHP APIs and role-specific interfaces handling over 7 different types of users.
- Curated data analytics APIs for a NextJS based admin panel managing 10000+ users across the institute.

RRCC Software for Indian Army EME Unit(React, PHP, MySQL, Kafka) *September 2024*
A Software to Track Resources in the Command Center.
- Implemented Pub-Sub Model for 5 to 7 operators for live feeding of the data and visualise it in better way.
- Created optimal RESTful APIs in PHP covering various requirements, boosting the operational efficiency.

QNA Bot (Streamlit, RAG, Llama3, Faiss, PyPDF) *June 2024*
A bot to help class 12 students to get answers to their question from textbook. — Project Link
- Innovated a RAG-based project using Llama3, vectorizing content chunks extracted from 12 chapter PDFs.
- Employed the all-MiniLM-L6-v2 Sentence Transformer with Faiss indexing to generate vector embeddings.

TECHNICAL SKILLS

Languages — C, C++, Python, JavaScript, Dart, PHP, Typescript, HTML/CSS
Tools — Linux, Docker, Flutter, Next.js, Node.js, FastAPI, Redis, SQL, MongoDB
Libraries/Cloud — React, SKLearn, Faiss, NLTK, Transformers, Firebase, AWS, GCP

POSITIONS OF RESPONSIBILITY

Technical Head, Microsoft Learn Student Chapter, TIET *April 2024 - Present*
- Contributed to 5+ open-source projects, including Supabase, MusicBlocks, Recruitment Portal, and Link Generator.
- Led teams of 20 developers as Coordinator for Makeathon 6 Website (2000+ visitors) and App (300+ users).

Core Member, Thapar Food Festival *September 2023 - November 2023*
- Worked with a team of 5 to Develop the website for North India's largest food festival. [Link]
- Managed event operations to ensure smooth execution with over 2000 registered participants.

ACHIEVEMENTS

National Winners	Bharatiya Antariksh Hackathon by ISRO for National Space Day	August 2024
Runner Up	Rewarded at "HackTU 5.0" hackathon conducted by CCS TIET	February 2024
Internal Hack Winner	2nd place at "Internal Hack" conducted by OWASP TIET	July 2023