TUSHAR MISHRA

◇ Bhopal, India
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OBJECTIVE

CS undergrad who just wants to learn and build things, i know a lot of things and what i don't know i can learn quickly. Exploring ml deeply by reading books, implementing papers and building projects.

EDUCATION

B.Tech in Computer Science, Bhabha eng. research institute, Bhopal — 2023 - 2027
SGPA : 8.21/10 — MP, India

SKILLS

Programming Languages	TypeScript, Python, HTML, CSS
Frameworks/Libraries	Pytorch, Keras, Tensorflow, Hugging Face, Scikit-learn, Next.js, Tailwind
Databases	PostgreSQL, MongoDB, Redis, MySQL
Dev Tools/Platforms	Git/Github, Docker, WandB Restful APIs, Fast APIs, Colab/Kaggle, Figma, Manim
Agentic/VectorDB	LangChain, LangGraph, Chroma, PineCone

PROJECTS/OPEN-SOURCE

Arche Papers - about research papers (Demo, Github) *Nextjs, Langchain, Redis, Clerk*

- This revolves around research papers providing Reproducibility and Difficulty score with reasons using RAG and Langchain,
- **Veritus search api** for curated results of user query, **Arxiv** description to store embeddings.

Image processor - Multiple domains in one (Demo, Github) *CLIP ,Pinecone, YOLOv9, Flan-T5, Pytorch*

- Developed an AI-powered RAG-based project that covers domains like **text generation, image captioning, segmentation, rag and class detection**.
- **CLIP** for embedding image and caption, **PINECONE** to store embeddings, **FLAN-T5** for generating captions, **YOLOv9m** for class detection and box prediction.
- Developed a **minimal responsive UI** with React, Typescript and Tailwind and Fast API in backend.

Orbit AI - Exoplanet detection (Demo, Github) *Voting Classifier, CatBoost, NextJs, TypeScript, Pytorch*

- Web-based platform built in nasa space challenge designed to accelerate the **discovery and validation of exoplanets** using machine learning.
- Worked on Kepler and Tess object of interest dataset, implementing **Preprocessing, Feature eng. and Model Architecture**.

Tiny projects (Github) *Gists, TensorFlow, Pytorch*

- Currently exploring Diffusion model papers with deep diving into maths and also we have Built GPT, Llama and MOE Model from scratch with **all novel components** and gpt was trained on 200M tokens of FineWeb dataset. (Github)

EXTRA-CURRICULAR ACTIVITIES

- Actively write blog posts and Twitter posts (X) to help people who're starting out in ml and also sharing my journey.
- Team Leader of the Nasa space challenge, in 2 days we have built Orbit-AI, it was full of challenges and was very exhaustive but rewarding experience, i wrote a blog on that!