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

EXPERIENCE

Research Intern - Osaka University, Japan　　　　　　　　　　　　　　　Present *(Remote)*

- Performing experiments on transfer learning, multi task learning and reading lots of papers

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.

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.

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 Fokker planck - 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!