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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
M.Tech. (AI)	Indian Institute of Technology, Jodhpur	8.43	2023-Present
B.S (Data Science & Engg.)	Indian Institute of Science Education and Research, Bhopal	8.59	2019-2023
Senior Secondary	TSBIE Board	98.3%	2019
Secondary	TSBSE Board	10.0	2017

EXPERIENCE

- AIDE School, IIT Jodhpur** May 2022 - Jul 2022
Summer Intern - Knowledge Distillation using Masked Vision Transformers Jodhpur, India
 - Developed a novel data augmentation technique with Masked Vision Transformers (MViT) for knowledge distillation, improving image classification accuracy from 74.8% to 76.2%.
 - Outperformed baseline and state-of-the-art methods in classification tasks through innovative modeling approaches.

PROJECTS

- AARIA: Autonomous Agentic Research and Information Assistant** Github
Research Agent Development with RAG Pipeline, LangGraph and CrewAI
 - Developed a Research Agent with a **RAG pipeline** and **LangGraph** for dynamic search, analysis, and summarization, optimizing decision-making with graph-based task management.
 - Integrated **Redis**, **Cohere API**, and **DuckDuckGo API** with tools for academic and web data retrieval.
 - Implemented a **multi-agent architecture** with **CrewAI** for task delegation, incorporating dynamic query generation, self-improvement via critique, and efficient feedback handling to enhance **scalability and adaptability** in research workflows.
 - Tools & Technologies Used:** LangGraph, CrewAI, Redis, Cohere API, DuckDuckGo API, Python
- Category-Aware Product Attribute Prediction in E-commerce** Github
Utilized CLIP ViT and Convnext for feature extraction and prediction across different product categories.
 - Developed a category-aware framework leveraging **CLIP ViT** and **Convnext-XXLarge**, optimizing product attribute prediction across multiple categories such as Sarees, Kurtis, and T-shirts.
 - Won the Meesho Data Challenge 2024** by achieving a top score of 0.802 on the private leaderboard by utilising **ensembling methods**, classification techniques, and advanced feature extraction, surpassing traditional approaches
 - Tools:** Python, Pandas, PyTorch, CLIP ViT, ConvNext, FAISS.
- Amazon ML Challenge 2024: Advanced Product Information Extraction** Github
Enhanced Entity Extraction from Product Images
 - Achieved 1st place in the Amazon ML Challenge 2024**, improving F1-score by **40%** (0.617 to 0.865) using **Qwen2VL-7B** and a **Two-stage Finetuning**.
 - Optimized model performance with **QLoRA-8bit quantization**, achieving **0.6s inference time** and ensuring scalable automation.
 - Tools:** Python, PyTorch, Hugging Face, Qwen2VL, QLoRA.
- Multilingual Speaker Identification and Verification System** Github
Developing Robust Speech Models for Multilingual Speaker Recognition Across Indian Languages
 - Achieved **98% accuracy** in identification and an **EER of 0.0176%** for verification of multilingual speakers across English, Hindi, Telugu, Bengali, and Marathi.
 - Collected and analyzed a **multilingual dataset** with **20 participants** using classical Machine Learning and Speech Processing techniques.
 - Tools:** Python, Jupyter Notebook, NumPy, Scikit-Learn, librosa, Spafe.

KEY COURSES TAKEN

- Deep Learning, Computer Vision, Speech Understanding, Dependable AI, ML & DL Ops, Starting New Venture

TECHNICAL SKILLS

- Programming:** Python, C, SQL
- Tools & OS:** Jupyter Notebook, Google Colab, Github, Linux, Git, WandB
- Libraries/Frameworks:** Pandas, Numpy, scikit-learn, Pytorch, Keras, OpenCV, LLaMA-Factory

POSITIONS OF RESPONSIBILITY

- Teaching Assistant:** AI, Human-Machine Interaction, Intro to ML Aug 2024 - present

ACHIEVEMENTS

- Meesho Data Challenge 2024:** Ranked 1st in Meesho Data Challenge hosted on kaggle 2024
- Amazon ML Challenge Winner:** Won the Amazon ML Challenge 2024 hackathon hosted on Unstop 2024
- Department Topper:** Achieved Departmental Rank 2 in M.Tech AI programme 2024
- MHRD Scholarship:** Received Central Government Merit Scholarship in Under Graduation 2019