HRISHIKESH RAVINDRA KARANDE

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EDUCATION

Indian Institute of Technology, Dharwad   **Karnataka, India**

Bachelor of Technology, Computer Science; November 2021 - July 2025   *CPI: 8.95/10*

SKILLS

Programming Languages: Python, C++

Database Management: PostgreSQL, MySQL, MongoDB, Neo4j

Generative AI : Langchain (Chains,agents,chromadb, Langsmith), LangGraph, autogen

Machine Learning & Deep Learning: Sci-kit Learn, Pandas, Numpy , Scipy, nltk, BeautifulSoup, Streamlit, OpenCV,PyTorch

Backend Development: Django, FastAPI

PUBLICATIONS

Evaluating the Efficacy of Large Acoustic Model for Documenting Non-Orthographic Tribal Languages in India (LREC-COLING 2024)

- Tribal languages such as Lambani Kui and Mundari and Soliga, which are non-orthographic and limited to a few native speakers, require Automatic Speech Recognition systems to conserve the tradition of these communities.

- Reduced the Word Error Rate (WER) of existing models based on Machine Translation by 78%, the baseline Bilingual Evaluation Understudy(BLEU) score was improved by almost 9 times .

WORK EXPERIENCE

Dvara Solution: **Karnataka,India**

Position AI-ML Intern (Part-Time)   *1 June 2024 - Present*

- Enhanced a Retrieval-Augmented Generation (RAG) based customer support solution by integrating Knowledge Graphs with Large Language Models (LLMs). Utilized Autogen to develop an agent-based system that evaluates various eligibility criteria for loans, such as annual income and assets.

- Reduce the average Response time of Optical Character Recognition (OCR) service and an Intelligent Customer Verification service from 12.5 seconds to 7seconds by using the concepts of concurrency in backend.

- Currently focused on implementing image/video liveliness detection to strengthen the robustness of the customer verification process.

Biology Lab: **IIT Dharwad, Karnataka,India**

Research and Development   *1 June 2024 - Present*

- Working on data preprocessing and machine learning techniques for Raman Imaging, utilizing multispectral and hyperspectral data to enhance analysis and interpretation.Leveraging machine learning to classify different spectra based on intensity for Raman Imaging.

Eternity ELearning LLP: **Pune, Maharastra,India**

Position Deep Learning Intern (Part-Time)   *1 December 2023 - 1 January 2024*

- OCR Model for extracting text from Answer sheets and Question Paper images by using GoogleOCR and OpenCV to extract text from the question paper therefore automating evaluation of answer sheet primarily.

- A pipeline model for handwritten text extraction by using openCV & pyTorch primarily.

Intern at AI Adventure :   **Pune, Maharastra, India (Onsite)**

Position (Part-Time)   *1 May 2023 – 1 Aug 2023*

- Primary responsibility was to develop AI models which would act as a peer programmer for the students to assist them instead of assigning a personalized tutor. Developed a chatbot for solving basic programming doubts and developing adaptive problem solving skills, for the students.

- The project received positive feedback from the employer as the chatbot initiative contributed to a significant increase in flow of students reflecting the tool's effectiveness in engaging potential students.

PROJECTS

Face Emotion Detection | *pyTorch, CNN, OpenCV Source Code*   **September 2022 - November 2022**

- CNN based model to detect the emotions on faces classified as happiness, neutral, sadness, anger, surprise, disgust, fear
- 85.76% accuracy achieved on test data and also able to detect multiple faces within the images.

Image Captioning Using Deep Learning: | *Python, CNN, PyTorch*   **Ongoing**

- Feature Extraction using pre-trained ResNet-50 for the CNN encoder, on images on Flickr8k dataset.
- LSTM and features extraction from image to develop a combined model that predicts image captions.

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