HRISHIKESH RAVINDRA KARANDE

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Personal Profile:

Passionate and dedicated professional with a keen interest in the intersection of computer vision and speech technologies. Possessing a solid foundation in machine learning, deep learning, and signal processing.I have a strong inclination towards implementing state-of-the-art research papers and integrating novel algorithms into practical applications.

OBJECTIVE:

To leverage my expertise in Machine Learning and Deep Learning to contribute to cutting-edge projects and drive innovation in a dynamic and collaborative environment. Seeking a challenging role where I can apply my skills in neural networks, and data analysis to solve complex problems and advance the field of artificial intelligence.

ACADEMICS:

Indian Institute Of Technology Dharwad:	B.tech Computer Science Engineering Semester V(2021-2025)	**CPI: 8.96/10**
Suryadatta Public School:	Higher Secondary Education (2019-2021)	**HSC: 88.7%**
City International School Kothrud:	Secondary Education (Uptil X std 2019)	**CBSE: 94.4%**

Courses Taken:

- Data Structure and Algorithm (Theory+lab)
- Software System Laboratory
- Introduction to Artificial Intelligence (Theory+Lab)
- Introduction to Probability & Data Analysis
- Probability Models and Applications
- Data Base and Information Systems (Theory+Lab)

SKILLS:

- Programming Languages: C++, C, Python (OOPs,Numpy)
- Data Science:
  - Data Collection: BeautifulSoup
  - Data Processing: Pandas
  - Data Visualiation: Seaborn, Matplotlib,plotly
- Machine Learning : Sklearn, nltk
- Deep Learning : Scipy, PyTorch
- Web Technologies: HTML, Streamlit, Gradio
- Databases : PostgreSQL, MySQL
- Generative AI : Langchain(Chains,agents,chromadb)

Experience:

1. Data Science Intern at AI Adventure (May 1 2023 – Aug 1 2023):
   As a startup focusing on developing AI intergrated courses taken for students and professionals who wish to do a domain switch or wish to pursue career in Software industry. Developing chatbots to partially function as mentor solving basic programming doubts and developing personalized problem solving skills. Using state of art LLMs so as to reduce the workload of existing programming mentors and also reduce the requirements for the new.

2. Speech Processing: Research and Development project for Using Large Language Models in Speech Recognition for Underesourced Languages Under the guidance of Prof. Prasanna (IIT DHARWAD):
   Tribal languages such as Lambani kui and Mundar which are non orthographic and limited to few native speakers, to conserve the tradition of these communities developing Automatic Speech Recognition systems is required. Improving the accuracy of existing models based on Machine Translation, replacing the Machine Translation systems by transfer learning and tranformers based architecture to build robust speech to text models. Leveraging the powers *of LLMs (particularly Whisper)* to further improvise the performance. Also submitted Research Paper titled:
   'Efficacy of Large Acoustic Model's for Underesourced Languages'.

3. Deep Learning Intern at **StudJee (December 2023):**
   Goal Developing end systems that can reduce the workload on the teachers for checking students answer scripts and extract text from printed documents. Contributed by using YOLO and supervised learning to get bounding boxes around the individual answers from a page/ multiple pages. Further developed a OCR model using Deep Learning trained on I_AM_Words dataset as a first approach towards extracting the text from image.

4. Parsec (Technical Fest IIT Dh 3.0):
   Part of Content and Design Team of Parsec 3.0, developing posters, painting mascots and logo as a volunteer for Parsec 3.0

Personal and Academic Projects:

1. **Bank Market Prediction EDA:** Analyzing a real-world dataset from a Portuguese banking institution's marketing campaigns. applied Exploratory Data Analysis (EDA) techniques to gain valuable insights into customer behavior and key factors influencing campaign success.Machine Learning models using various algorithms like Logistic Regression, Random Forest Classifier, and Gradient Boosting Classifier.
2. **Data Analysis Dashboard**: Using streamlit,plotly, pandas,matplotlib to produce dashboard for interactive visualization and analysis of various fields present in data.
3. **Pacman Project UC Berkeley**: Applying the search algorithms, reinforcement learning (Value and Policy iteration), multi agent search techniques covered in Introduction to Artificial Intellingence course to pacman game.
4. **Tic-Tac-Toe**: Using Alpha beta pruning and multiagent game playing techniques to develop bot that can defeat or tie a Tic-Tac-Toe game against humans.
5. **Machine Learning algorithms**: Making machine Learning models from scratch using only numpy,pandas,matplotib and understanding the complex mathematics and statistics behind it.
6. **Resume Helper**: Using Genrative – AI (model GPT-4) , Langchain, python and streamlit that can inform analyze applicants resume and give feedback on basis of his/her target job .
7. **Face Emotion Detector:** Using Model majorly based on Convolutional Neural Networks and PyTorch to develop face emotion detector that classifies a new face image into 8 categorical Facial Expression. Main challenges faced were dataset imbalanced resulting in biasedness for a particular facial expression over the others.
8. **Image Captioning:** developing a model that is capable of captioning an image given as an input based on the previous images in it's dataset. Cascading and Combining two different models i.e feature extractor model with an lstm model so that model learns from both the image features and text features simultaneously.