Amritha Pradeep

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Education

•Bachelor of Technology in Artificial Intelligence and Data Science *2020-24*

APJ Abdul Kalam Technological University CGPA: 8.69/10

PROFESSIONAL EXPERIENCE

•Programmer *Oct 2024 - Present*

Manipal Academy of Higher Education (MAHE-BLRU)

- Contributing to development for the MeitY (Government of India) funded consortium project "Sanskrit Knowledge Accessor"
- Engineered and launched the official project website, increasing visibility and accessibility for stakeholders
- Contributed in developing an innovative e-Reader application for Sanskrit texts by integrating advanced linguistic analysis from Samsaadhanii tool
- Optimizing scripts for text analysis, processing, and generation while collaborating with scholars to ensure linguistic precision.

•Data Science Intern *Feb 2024 - Aug 2024*

Technovalley Software India Pvt. Ltd.

- Built high-accuracy medical diagnostic models including tumor classifier (KNN), skin cancer detector (CNN), and lung disease identifier (DenseNet) with interpretable Grad-CAM visualizations.
- Developed an agricultural tool for potato leaf disease detection utilizing CNN architecture and OpenCV
- Executed business intelligence projects including customer segmentation (KMeans clustering), income prediction (Gradient Boosting), and customer churn analysis (ANN)

AI & ML Projects

•FlickMatch – AI Audio-to-Movie Matcher

Streamlit app that matches dialogue audio to movies/series using transcription and semantic search.

- Accepts user audio input and returns the matched movie/series title, year, and episode/season.
- Uses OpenAI's GPT-4o for transcription, HuggingFace embeddings, and Chroma vector DB for retrieval.
- Built with LangChain, Streamlit, and Python for an interactive UI with real-time results.

•QuickDraw Clone with Gemini AI

A Pictionary-style AI game built with Streamlit and Google Gemini API.

- Built a doodle guessing game where AI predicts user sketches of randomly chosen words..
- Integrated Gemini API for both word prompts and image-based AI predictions.
- Used Streamlit Drawable Canvas with freehand and shape tools for sketching.

•Chest Disease Detection using Deep Learning

CNN-based model for classifying chest X-ray images into multiple disease categories using image preprocessing and transfer learning.

- Built a deep learning model using DenseNet121 and transfer learning to detect multiple chest diseases from X-ray images.
- Implemented data augmentation, preprocessing, and Grad-CAM to improve generalization and interpretability.

Technical Skills and Interests

Languages: Python, C, Java, R
ML/DL: Scikit-learn, TensorFlow, Keras, Regression, Classification, SVM, Ensemble Methods, CNN, RNN, LSTM, GAN
Data Processing: Pandas, NumPy, Matplotlib, Seaborn, Data preprocessing, Feature engineering
NLP: TFIDF, Word2Vec, GloVe, FastText, SBERT, LLMs, RAG, LangChain, Semantic Search
Tools & Deployment: Flask, Streamlit, AWS EC2, OpenAI API, Google Gemini API, Hugging Face
Soft Skills: Problem Solving, Self-learning, Presentation, Adaptability

Certifications

•Introduction to Large Language Models NPTEL *May 2025*

•Career Essentials in Generative AI Microsoft, LinkedIn *April 2025*

•Advanced Generative AI Program Innomatics Research Labs *Dec 2024*

Professional Development

•Guest Lecturer Manipal Academy of Higher Education, Bengaluru *April 2025*

- Delivered lecture on Machine Translation covering evolutionary development and linguistic challenges to students and faculties.