Hemant Kumar Agarwal

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A Highly motivated final-year Data Science and Programming student at IIT Madras with a strong foundation in Machine Learning, Deep Learning, Web Development, and Data Analysis. Passionate about building intelligent systems, optimizing models, and solving real-world problems through data-driven solutions.

Education

Indian Institute of Technology, Madras
B.S. in Data Science and Programming
Jan 2021 - present
CGPA: 7.95

Technical Skills

Core Skills: Python (Advanced), SQL, Machine Learning, Deep Learning, Statistical Analysis

Libraries and Frameworks: Pandas, NumPy, Scikit-learn, Flask, Vue.js, PyTorch, Langchain

Data tools: MySQL, Jupyter Notebooks

Developments: Git, VSCode, REST APIs, HTML/CSS

Machine Learning: Regression, Classification, Fine Tuning, Model Optimization

Others: Data visualization, Logical reasoning

Projects

Animal and Plant Image Classification
Tools: TIMM, PyTorch, OpenCV, Albumentations, Python

- Preprocessed and transformed images before training a TIMM-based image classification model. Fine-tuned the model on a large flora and fauna dataset, optimizing for weighted F1 score using transfer learning and Kaggle GPUs

Deepfake Voice Detection
Tools: Librosa, PyTorch, Wav2Vec, Whisper, MFCC

- Developed a deepfake voice detection model using CNN for the IndicTTS Deepfake Challenge on Kaggle, optimizing for ROC-AUC across 16 Indian languages. Leveraged advanced AI/ML techniques to detect AI-generated speech with high accuracy.

Multilingual Sentiment Analysis
Tools: Hugging Face Transformers, Pytorch, Pandas, Numpy

- Implemented a prompt-based approach using LLaMA 3.1-8B-Instruct for sentiment classification across 13 Indian languages. Optimized prompts to improve F1 score without fine-tuning

AI Hiring Assistant Chatbot
Tools: Streamlit, Langchain, Flask, Hugging Face Model

- Developed an AI-powered chatbot using Streamlit and LLMs to assist with hiring tasks, including candidate detail collection, tech stack identification, and technical question generation.

Library Management Application
Tools: Flask, Celery, Redis, Python

- Developed an application with separate dashboards for librarians and students.
- Implemented features to add, delete, update books, manage sections, and provide book access control.
- Enabled students to request, read, and review books.

Medical Firm Revenue Enhancement Analysis
Tools: Python, Statistical Methods

- Analyzed data to identify factors influencing annual income.

- Provided actionable recommendations to optimize revenue and operational efficiency.

Recipe Rating Prediction: A Machine Learning Approach
Tools: Scikit-learn, Pandas, Python

- Preprocessed data from recipe reviews.
- Built machine learning models, optimized using hyperparameter tuning, and predicted user ratings.

Self Quantified Tracker
Tools: Flask, Python, HTML, CSS

- Created a personal data tracking app where users can track metrics like sleep and water intake.
- Visualized progress through graphs and enabled users to add, update, and delete entries.

Experience

Group Leader - Group 312, Saranda House
IIT Madras — October, 2021 – August, 2022

- Led the group for three consecutive terms.
- Facilitated collaboration between students and faculty, addressing member concerns and resolving team issues.

Achievements

- Ranked among the top 10 in a city-wide exam and awarded a 100% scholarship.
- Freelanced as a GIS analyst for 3 years, delivering spatial data insights.