Yuvraj Singh

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EXPERIENCE

IISER, Kolkata | *Research intern*   May 2024 – Present

- Working under Prof. Kripabandhu Ghosh on exploring Fine-tuning LLMs and Using GenAI Models on Medical and Finance Data for QnA

AIISC | *Research intern*   March. 2024 – Present

- Working with Prof. Amitava Das on Prevention of Hallucination in LLMs
- Part of the Data Generation Team- Conduct Collecting, performing Data Analysis and reformation to be used by various RL-based models for idea testing.

Clinical AI Assistance | *Research intern*   Dec. 2023 – March 2024

- Worked closely with the Research Team for the main project, building dataset and testing the model's generated output with other Text Generative tools like GPT etc.
- Used HuggingFace API to use various LLMs to test our generated response to the original ones
- Data Gathering and cleaning and performing Data Analysis on the generated output to view model's efficiency

SKILLS

Languages: C++, Python, Dart
Frameworks: Pytorch, Keras, Flutter, Flask
NLP: RNN, LSTM, Bi-LSTM, Word2Vec, Fasttext, LLMs
Machine Learning: Supervised and Unsupervised Algorithms
Deep Learning: ANN, Seq2Seq (Encoder-Decoder), Autoencoders
Computer Vision: CNN, OpenCV, YOLOv8, Vision Transformer
Tools: Streamlit, Git, Github, HuggingFace, Firebase, OpenAI API, Gemini API

PROJECTS

PlogPayouts (Google Solution Challenge '24) | *AI-driven Plogging System*   2024

- * **Role**: Backend (AI/ML+Server)
- * **Vision/Goal**: To bring about an effective change in the garbage collection process and also tackle the social stigma regarding the position and work of garbage collectors to harbour a cleaner and greener environment, working together without any social differences.
- * **Solution**: Detection, classification and counting of garbage collected by the users for which redeemable coins are rewarded in exchange for their hard work, lowering the need for post-garbage processing while being the garbage collectors themselves doing a part of their daily activity-jogging.
- * **Tools**: Flutter, HTML, CSS JavaScript, Bootstrap, Flask, Python , Django , Keras, OpenCV, YOLOv8, Firebase Firestore, Realtime Database, Storage, GCP APIs,Mapbox, Render, Docker

Insight-Ed (HackNITR 5.0) | *EdTech Platform for Student and Teacher*   2024

- * **Role**: Backend (AI/ML+Server)
- * **Vision/Goal**: Our solution tries to bridge the knowledge gap between a teacher and a student in online classes by leveraging the power of AI to provide the teacher and student with insights to better prepare themselves for the course/lecture.

- *Solution*: Implemented features such as- Detection of Emotion and Attentiveness of a Student for better understanding of student's understanding of a topic, Topic Modelling to know exactly where he/she lost attention, QnA with uploaded PDFs (Handwritten/Printed) along with any Videos/Tutorials and Reverse Video Search to quickly look for any concepts in the same.
- *Tools*: Flask, Python, Gemini API, Whisper API, HuggingFace Open-Source Models (EmotionLLM), MTCNN, LangChain, Cloud Run, GCP(VM)

MoviesMania | *A Reverse Search based Movies Recommendation System(Geek-o-thon @IIIT-BH)* 2023

- *Role*: Team Lead
- *Vision/Goal*: To provide an interface to users to find similar movies/web-series recommendations based on an uploaded video clip/YT Short.
- *Solution*: To make use of the various faces of actors in the provided clip and the details provided(title, genre, plot) for the prediction of the movie's title (if available in the dataset) or similar movies/web series.
- *Result*: Prediction of movie's title(if available in the dataset) with 78% accuracy and similar movies with 85% accuracy.
- *Tools*: Keras, Tensorflow, Word2Vec (Word Embeddings), MTCNN, NLTK, Spacy, VGGFace, OpenCV, Streamlit, Render

ACHIEVEMENTS

Finalist @YESIST12 '24- Special Track 2024
Led the winning project (PlogPayouts) at YESIST12 '24 under Special Track category

Geek-o-thon (D3 @IIIT-BH) 2023
Led the winning project (MoviesMania) at D3 2023, inter-college hackathon in AI/ML domain

EDUCATION

International Institute of Information Technology Bhubaneswar June 2027
BTech Computer Science Engineering *CGPA: 7.94(1st Semester)*

Delhi Public School 2022-23
CBSE Grade 12 *Percentage: 91*

Amity International School 2021-22
CBSE Grade 10 *Percentage: 96*