Maitreya Zalte

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Education

Indian Institute of Information Technology, Nagpur (IIIT Nagpur) **2020 – 2024**
BTech in Computer Science Engineering (CSE) *Nagpur, Maharashtra*

Experience

DeepSolv Innovations **Dec 2023 – Present**
Artificial Intelligence Research Intern (Generative AI)

- **Leading the development of an Autonomous AI Agents Project** based out of Large Language Models (LLMs).
- Conducted comprehensive **literature surveys on autonomous AI agents, agent tuning, and reinforcement learning from AI feedback** to inform project design and implementation.
- **Evaluated and integrated Open Large Language Models (LLMs).**
- **Collaborating with the founders** to ensure alignment with project objectives and deliverables.

Projects

Autonomous Pizza Ordering AI Agent | *Generative AI (Gen AI), Artificial General Intelligence (AGI)* **GitHub Link**

- Developed an **LLM based autonomous agent** that places pizza orders for customers.
- Used **OpenAI API's function calling ability** to enable the agent to use external tools.
- The agent engages itself in an **interactive conversation with the customer**, gathering necessary information and using external tools whenever necessary to place orders leveraging **Retrieval Augmented Generation (RAG)**.
- Developed a **chat interface** using **Streamlit**.
- Agents like these outperform traditional NLP based chatbots.
- Technologies Used : Python, OpenAI API (2023-07-01-preview), Azure Cognitive Search, Streamlit.

License Plate Detection and Number Extraction | *Data Science, Deep Learning* **GitHub Link**

- This project extracts the license number out of an image containing frontal or back view of the vehicle.
- Detected number plate using contour method of **Object Detection**.
- Implemented **Character Segmentation** to segment the number plate characters.
- Used **CNN** for **Character Recognition**.
- Libraries used : tensorflow, cv2, keras, pandas, matplotlib, numpy.

Comment Toxicity Classification | *Natural Language Processing, Machine Learning* **Github Link**

- A **Multilabel Classification Problem** wherein a comment is classified into 3 labels : Toxicity, Insult and Threat.
- **Removed the class imbalance** from the dataset and performed **feature engineering**.
- Preprocessed the comments using standard **NLP techniques**.
- Used **LSTM** to output values for the labels with **validation accuracy of 95.4%**.
- Libraries used : pandas, nltk, tensorflow, matplotlib, numpy.

Skills and Certifications

Languages: Python, C++, SQL
Technical Skills: Generative AI, Large Language Models (LLMs), Prompt Engineering, Artificial Intelligence, Machine Learning, Natural Language Processing, Deep Learning, Data Science, Computer Vision, Exploratory Data Analysis, Data Visualization, Power BI, Data Cleaning, Data Analysis, Microsoft Power BI, Microsoft Azure
Non-Technical Skills: Problem Solving, Communication Skills, Time Management, Story Telling (Data Science)
Certification: **Fundamentals of Deep Learning (NVIDIA DLI).**

Leadership / Extracurricular

- **Mentor, Dimensions (AR/ VR Club IIITN)** : Mentored freshers on Object Spawning and Image Tracking using AR modules in Unity Engine.
- **Head, Hindi RajBhasha Wing IIITN : Organised Hindi Pakhwara** at IIITN in Aug 2021 commemorating **'Azadi Ka Amrit Mahotsav'** on the **directives of Govt. of India**.
- **Content Head, PROBE IIITN (Student Media Body) :** Led a Content Team of about 10 people at Probe IIITN.