Sachin Bahuleyan

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Education

Indian Institute of Technology Mandi Aug 2022 - May 2024
M.Tech Computer Science *Current CGPA: 8.12*

Projects

End to End RAG Based Chatbot | *Python, LangChain, FAISS, Flask* Project Link

- Developed a Retrieval-Augmented Generation (RAG) based chatbot using Langchain framework.
- Leveraged miniLM v6 from HuggingFace for sentence embedding.
- Leveraged Facebook AI Similarity Search (FAISS) for efficient vector database retrieval.
- Utilized Large Language Model Llama 2 7b quantized version for large language model capabilities.
- Built a web application for the project using Flask.

End to End Student Performance Predictor | *Python, Flask* Project Link

- Conducted comprehensive Exploratory Data Analysis (EDA) to understand data distribution, identify outliers, and studied relationships between features.
- Developed an end-to-end machine learning project for predicting student performance with data pipeline, exception handling and logging.
- Trained multiple models including linear regression, random forest, Decision Trees and XGBoost. Achieved an R-squared score of 87% on the held-out testing set. Built a web application for the project using Flask.

Airbnb New User Booking | *Python* Project Link

- Predicting where a new user will book their first travel experience. Using this Airbnb can share more personalized content with their community, decrease the average time to first booking, and better forecast demand.
- Conducted comprehensive Exploratory Data Analysis (EDA) to understand data distribution, identify outliers, and studied relationships between features.
- Trained multiple models including random forest, Decision Trees and XGBoost.
- Achieved a public score of 0.86 on KAGGLE.

Major Project (Final Year Project)

Reinforced Bot Behavior | *Unity 3D, C#, Logitech G29 Driving Wheel, VS Code* May 2024

- Designed and implemented a realistic driving environment within Unity.
- Established seamless integration between the Logitech G29 Driving Wheel and Unity for enhanced agent control.
- Leveraged State-of-the-art Reinforcement learning Proximal Policy Optimization and Imitation Algorithms: Behavior Cloning and Generative Adversarial Imitation Learning
- Effectively trained the agent in a dynamic multi-agent environment, preparing it for complex real-world interactions.

Skills

Python, C++, SQL, Pytorch, LangChain, Linux, Large language models, Statistics, Machine learning, Deep learning, Data science, NLP, Time Series Forcasting, JavaScript, HTML/CSS, Git/GitHub, Problem Solving LaTeX

Coursework

Deep Learning, Advanced Data Structures & Algorithms, Linear Algebra, Probability, Statistical Methods

Achievements

GATE CSE 2020: Achieved 98 percentile