Shyam Sundar

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Projects

LLM-Powered Coupon Recommender | *Python, Streamlit, Langchain, OpenAI* **November 2023**

- Developed a **QA system for e-commerce** with personalized coupon recommendations using **OpenAI's LLMs**.
- Streamlined user interactions through a **Streamlit** interface and **Langchain** for real-world scenario simulations.
- Incorporated **FAISS** for refined recommendation processes.

PeopleCare Insurance Prediction | *Python, Jupyter, Azure Cloud, Flask, Docker* **October 2023**

- Expanded PeopleCare into vehicle insurance with a predictive model for **effective customer targeting**.
- Thorough analysis of customer behavior and data cleaning for accurate predictive modeling.
- Achieved **80%** prediction accuracy using **LightGBM**.

Hate Speech Prediction | *Python, Pytorch Lightning, Flask, Docker* **October 2023**

- Developed a robust hate speech detection algorithm for content filtration.
- Attained **91.95% accuracy** with fine-tuned pre-existing **Bert model**.
- Executed model deployment via **Flask** and **Docker** for scalability.

Machine Failure Prediction | *Azure Machine Learning* **September 2023**

- Conducted an extensive investigation of a Milling machine to enhance operational reliability.
- Conceived **97% recall rate** for predicting machine failures using logistic regression and **SMOTE**.
- Managed in **Azure Designer** for comprehensive data analysis and predictive modeling.

Data Driven Model for Anomaly Detection and Path Prediction | *Python, Deep Learning* **July 2022 - April 2023**

- Investigated and improved AIS for cargo vessel anomaly detection and path prediction.
- Formulated a statistical method for robust **anomaly detection**.
- Engineered a path prediction algorithm using a **sequence-to-sequence model with an attention mechanism**.

Federated Learning on Multiclass classification| *Python, Deep Learning, Jupyter Notebook* **June 2022 - July 2022**

- Utilized the CIFAR dataset for training, involving **20 client nodes** with training activities based on the **VGG-19 model**.
- Central global model collected weight updates from six randomly selected client models, averaging the contributions, and disseminated the updated global model to all participating clients.
- Effected a commendable accuracy rate of **78%** upon successful completion of the training process, demonstrating the effectiveness of the federated learning approach in preserving data security and privacy while maintaining model performance.

Education

Defence Institute of Advanced Technology **Pune, IN**
M.Tech in Modelling and Simulation, GPA: 7.95 *May 2023*

National Institute of Technology **Tiruchirappalli, IN**
B.Tech in Chemical Engineering, GPA: 7.65 *May 2021*

Relevant Coursework

- Data Structures
- Advanced Numerical Techniques
- Machine Learning
- Data Science
- Deep Learning
- Computer Graphics

Technical Skills

Languages: Python, C/C++, SQL (Postgres), Matlab, Latex
Frameworks: Pytorch, Tensorflow, Flask, Pytorch Lightning
Tools/Platform: Tableau, Power Bi, Azure, Git, Jupyter, Docker
Libraries: Scikit-Learn, Pandas, Numpy, Matplotlib, Seaborn

Certifications

- Certified Associate Data Analyst
- SQL [Advanced] - Hackerank
- Management Consulting Mentorship
- Generative AI at SAP
- ML for Business professionals using No-Code AI tools
- Python [Basic] - Hackerank
- Software Engineer Intern -Hackerank

Publications

Suspicious Event Detection of Cargo Vessels Based on AIS Data at ICDMAI,2023