









# Shyam Sundar

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## PROJECTS

- LLM-Powered Coupon Recommender**  | *Python, Streamlit, Langchain, OpenAI* Nov 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* Oct 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* Oct 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* Sep 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* Jul 2023 - Apr 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* Jun 2022 - Jul 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* May 2023
- National Institute of Technology** Tiruchirappalli, IN  
*B.Tech in Chemical Engineering* May 2021

## 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 •Management Consulting Mentorship •Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization •ML for Business professionals using No-Code AI tools •Python [Basic] - Hackerank •SQL [Advanced] - Hackerank •Software Engineer Intern -Hackerank

## PUBLICATIONS

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