REVENTH SHARMA

Ph: +919687936729 | Email: sharmareventh@gmail.com | LinkedIn | Github

EDUCATION

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, Pilani — Pilani, Rajasthan
B.E. Chemical Engineering with Minor in Data Science **(GPA: 8.74/10)** — August 2017-July 2021
Relevant Coursework: Data Mining, Machine Learning, Neural Networks and Fuzzy Logic, Probability and Statistics, Applied Statistics, Optimization
MOOC Specializations: Data Structures and Algorithms (Coursera), Object Oriented Programming (Coursera)

SKILLS

Languages and tools: **Python, Scala, C++, C, Java, MySQL, MATLAB**
Data Visualization: **Superset, Plotly, Tableau, MatplotLib,**
Python frameworks and libraries: **Tensorflow, PyTorch, PySpark, SparkML, Transformer, Detectron2, Gensim, NLTK, SpaCy**
Big Data Processing Framework: **Azure, HDFS, Hadoop, Docker, Airflow**

WORK EXPERIENCE

COUTURE.AI — Bangalore, Karnataka

Data Science Engineer — July 2021-Present
Data Science Intern — January 2021-June 2021

Projects:

❖ **Image Search: Search-Based Solution for User's Image-Based Input**
July 2022-Present

- ➢ Developed an Instance Segmentation and Transformer model based on SWIN-L transformer and Vision Transformer to extract fashion objects from the user input image and embed them
- ➢ Created a FAISS-based search algorithm to search for relevant fashion items in the product catalog from the user's input image
- ➢ Developed APIs to integrate the model on Ajio's Android and iOS apps
- ➢ In a span of one month, 13K users made use of image-based search instead of traditional text search

❖ **Similar Product Recommendation: Content-Based Recommendation to Find Top-16 Similar Catalog Products**
October 2021-June 2022

- ➢ Tokenised and embedded textual attributes using the MPNet Transformer model
- ➢ Developed an Image Embedding model based on Vision Transformer on fine-tuned with the in-house fashion dataset
- ➢ Created a nearest neighbor search algorithm based on KNN to search for top-16 most similar catalog products using textual and visual embeddings
- ➢ Developed a robust end-to-end pipeline to account for the latest added products and reduced pipeline runtime by 80%

❖ **Personalized Recommendation: Cluster Level Personalized Product Ranking List**
January 2021-September 2021

- ➢ Built an automated pipeline for real-time processing of user interactions data using Spark and Airflow
- ➢ Developed a relevance ranking algorithm using a combination of Collaborative Filtering and XgBoost Learning to Rank model
- ➢ Handled popular product bias and relevance for newly arrived products and new users (The Cold Start Problem)
- ➢ Designed metrics for offline evaluation of the ranking algorithm
- ➢ The developed model increased conversion percentage (Number of buys/ Number of clicks) by 7-12%, validating the enhanced recommendations

Reliance Industries Limited — Dahej, Gujarat
Summer Intern — July 2020-August 2020
Project:

❖ **Optimization of Acetylene Convertor in GCU Plant**

- ➢ Developed a multivariate constrained optimization technique to determine reactor variables and chemical input flow rate to maximize acetylene purity using Adam optimizer

ACADEMIC PROJECTS

❖ **Image Captioning System Using ResNet-18 and Transformer: Term Paper**
Department of Computer Science, BITS-Pilani January 2020-May 2020
- ➢ Built an image captioning system using ResNet18 as encoder and Transformer model as decoder
- ➢ The model performed better than the existing LSTM-based decoders in the literature and achieved a BLEU-4 score of 25.3 on the MS-COCO dataset

❖ **Development of Dynamic Gas Concentration Predictor from a Multi-Sensor Array**
Department of Chemical Engineering, BITS-Pilani August 2019-December 2019
- ➢ Built an LSTM-based model to predict concentration of gases in a mixture based on TGS sensor array output in a fluctuating environment
- ➢ Built an anomaly detection algorithm that flagged and trimmed anomalous sensor values using the four-sigma rule on moving window chi-squared distributed sensor data

❖ **Wheat Type Classification Using Active Learning**
Department of Computer Science, BITS-Pilani March 2020-June 2020
- ➢ Designed an Active Learning model based on Random Forest architecture to predict the type of wheat based on its dimensional and visual characteristics
- ➢ The data was trained on only 20% of the total train data volume by querying training data points using pool based uncertainty method, which increased the robustness of the training
- ➢ The model achieved final test accuracy of 93%

❖ **Statistical Analysis and Forecasting of Solar Energy in the State of Rajasthan, India**
Department of Mathematics, BITS-Pilani August 2020-December 2020
- ➢ Performed statistical tests to validate seasonality in Solar Energy data
- ➢ Predicted next week and month's expected radiation intensity using ARIMA and SARIMA-based statistical models and LSTM-based deep learning model

❖ **Optimization of Solar Energy Absorption Ability on NanoFluids using Genetic Algorithm: Term Paper**
Department of Chemical Engineering, BITS-Pilani August 2020-December 2020
- ➢ Developed a computational model based on Genetic Algorithm to determine the optimal nano-fluid concentration and optimal flow rate for maximizing energy absorption for a given solar incidence

❖ **A Review on Bottom-Hole Pressure Estimation in Oil Wells using Computational Intelligence Techniques: Term Paper**
Department of Chemical Engineering, BITS-Pilani August 2020-December 2020
- ➢ A review article to recommend data collection, model selection and optimization methods for low-cost accurate prediction of the bottom-hole pressure in oil wells