ABHIMANYU GANGULA

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PROFESSIONAL SUMMARY

Aspiring Machine Learning Engineer with **2+ years**' experience as a Data Analyst. Well-versed with statistical data modeling and skilled at deploying appropriate ML models to deliver business value. Adept at translating actionable data insights into business outcomes. Proficient in **Python**, **SQL**, **Tableau**, **Machine Learning Algorithms, and libraries**.

ACADEMIC EDUCATION

University of South Florida, *Tampa* **Jan'21 - Dec'22**
Master's in Business Analytics and Information System

University of Petroleum and Energy Studies, *Dehradun* **July'13 - May'17**
Bachelor's in Applied Petroleum Engineering with Specialization in Upstream

SKILLS

Programming: Python, R, C#, SQL(Terradata, BigQuery)
Big Data: Apache Hadoop, Apache Spark, MapReduce, Hive
Statistical Analysis: Hypothesis Testing, A/B Testing, Inferential and Descriptive Statistics, Exploratory Data Analysis
Machine Learning: Time-series forecasting, Neural Networks, Natural Language Processing (NLP), Predictive Modelling
Libraries: Pandas, NumPy, SciPy, Scikit-Learn, TensorFlow, PyTorch, Keras, Seaborn
Visualization: Tableau, Power BI, Excel, Visio (UML)

WORK EXPERIENCE

Machine Learning Intern – **iQuest Solutions,** *Plano (TX)* **Aug'22 – Present**

Time Series Forecasting

- Built a multivariate **time series forecasting** model in **Pyspark** to predict the busiest airlines and recommend better flight routes for a given season using **ARIMA**, **SARIMA, VAR** techniques and **neural networks (RNN, LTSM)**
- Evaluated the models and working on deploying the model to production environment using **Docker**.

Data Science Intern – **FCCI Insurance,** *Sarasota(FL)* **June'22-Aug'22**

Predictive Modelling

- Developed **underwriting** and **claims models** by creating predictive features, utilizing external data, and applying statistical and machine learning techniques (**GLM, Random Forest, Extreme Gradient Boosting**).
- Devised pricing and underwriting strategies based on **predictive model scores**.

Data Analyst– **Tech Mahindra Ltd,** *Bangalore*(*India)* **May'17-Jul'19**

- Mined, analyzed, and manipulated databases with 20 years of data using **SQL** and **Excel** for diverse business requirements to generate data reports and key business operations strategies.
- Designed **interactive**, **data-driven dashboards** and **scorecards** using **Tableau** and business intelligence tools to monitor real-time data.

RELEVANT PROJECTS

- **Financial Risk Estimation using Monte Carlo Simulations** **Nov'22**
  - Assessed risk of an investment portfolio using Monte Carlo simulation.
  - Scraped stock data from Yahoo using **REST API calls** and loaded them onto a PySpark dataframe.
  - Trained Considered market factors **GSPC value, IXIC value, return of crude oil, return of treasury bonds** to estimate the **risk variable (VAR)** over the next two weeks with a 95% confidence interval.
  - Evaluated the results of the simulation using a **back-testing** method.

  Tools & Technologies used: PySpark, HDFS, Jupyter Notebook

- **Sentiment Analysis of product reviews of an e-Commerce platform** **May'22**
  - Built a classifier to predict the reviews of products from Flipkart (e-Commerce) into their respective classes.
  - Loaded the reviews onto a spark session and pre-processed the dataset.
  - Processed the reviews with *NLP* techniques like *Tokenization*, stop words removal and built a *tf-idf vectorizer* as input to machine learning models (Random Forest Classifier, Linear SVC and Logistic Regression).
  - Built the classification model and evaluated the models to dish out the best predictive algorithm.

  Tools & Technologies used: Databricks, PySpark and Python

- **Influence of socioeconomic factors on Incarcerated population** **Apr'22**
  - Built comprehensive data models such as Poisson distribution, MLE and Quasi-Poisson Distribution in *R studio* to analyze the influence of socio-economic factors on prison population.
  - Collected data from various sources such as *prisonpolicy.org, data.census.gov* and multiple websites and pre-processed data along with feature extraction to make the dataset ready for analysis.
  - Examined the correlation effects and skewness in the data with plots, graphs and data visualization techniques.
  - Presented the marginal effects of each variable and made actionable recommendations to mitigate the influences.

  Tools & Technologies used: Tableau, R and R studio

- **EDA in Film Industry for a successful movie studio** **Nov'21**
  - Webscraped data from websites such as *imdb, moviefone, boxofficemojo* etc., to extract data using *BeautifulSoup.*
  - Loaded data onto a dataframe using pandas and cleaned/pre-processed the data.
  - Visualized the data in Tableau to answer questions such as :
    a. How much should a studio spend to make a successful movie
    b. What genres and age groups should the studio focus on
    c. What time of the year should a studio slate their releases
  - Made recommendations and presented results for running a successful movie studio.

  Tools & Technologies used: Tableau, Python and Jupyter Notebook

- **Predicting Drill bit wear and Reservoir Formation using ML techniques** **June'22**
  - Analyzed data (drilling & logging) provided by Equinor on Volve field (North Sea) made public in 2018.
  - Problem statement is two-fold: To predict drill bit wear (Regression) and Reservoir type (Classification).
  - Developed and fine-tuned the ML algorithms for Formation Classification using K-Neighbors Classification(12 ¼) and Gradient Boost Classifier(8 ½) with an accuracies over 92% and 76% respectively.
  - Compared different ML algorithms like Decision Tree, Random Forest and Ada Boost with accuracies over 95 % to predict drill bit wear with corresponding sections (26",17 ½ , 12 ¼ , 8 ½) accordingly.

  Tools & Technologies used: Python, Jupyter Notebook, Tableau, Pandas, Numpy and Seaborn

- **Predictive Data Model using Azure ML Studio** **May'21**
  - Built a predictive model in Azure ML Studio for Bionique Inc. to develop wearable medical-grade devices.
  - Used Machine Learning algorithms such as Random Forest, SVM and AdaBoost to train the models.
  - Trained the model against previous datasets of 5 years and tested it against a quarter of the data to evaluate the performance of the model.

    Tools & Technologies used: Azure ML studio