Data Science Internship Projects

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Internship Duration: 23/12/2024 to 23/03/2025

Projects

1.Descriptive Statistics and Data Profiling

- Description: Analyze a small dataset (e.g., student scores, product reviews) and provide summary statistics (mean, median, mode, etc.) and insights.
- Skills Learned: Data exploration, statistics.
- Tools: Python (Pandas, Numpy, Matplotlib).

2.Data Cleaning and Transformation

- Description: Use a messy dataset with missing values, duplicate entries, and inconsistent formatting to clean and transform it into a usable form.
- Skills Learned: Data cleaning, handling missing data.
- Tools: Python (Pandas, OpenRefine).

3.Movie Analytics Dashboard

- Description: Build a simple dashboard for movie analytics (e.g., IMDb data) using Python or Power BI.
- Skills Learned: Data visualization, interactive dashboards.
- Tools: Python (Plotly, Dash), Power BI.

4.Social Media Engagement Analysis

- Description: Analyze engagement metrics (likes, shares, comments) from a small dataset of social media posts.
- Skills Learned: Data exploration, visualization.
- Tools: Python (Seaborn, Matplotlib).Tools: Python (Scikit-learn, Pandas, Matplotlib).

5.Fraud Detection in Banking Transactions

- Description: Use a financial transactions dataset to classify transactions as fraudulent or legitimate.
- Skills Learned: Classification algorithms, feature engineering.
- Tools: Python (Scikit-learn, Pandas).

6. Natural Disaster Tweet Classification

- Description: Classify tweets as disaster-related or not using natural language processing techniques.
- Skills Learned: Text preprocessing, classification models.
- Tools: Python (NLTK, Scikit-learn).

7. Retail Sales Prediction

- Description: Build a regression model to predict monthly sales for a retail store using historical sales data.
- Skills Learned: Time series analysis, regression modeling.
- Tools: Python (Scikit-learn, Statsmodels).

8. Churn Prediction for a Telecom Company

- Description: Predict customer churn using demographic and usage data.
- Skills Learned: Data preprocessing, classification modeling, feature engineering.
- Tools: Python (Scikit-learn, XGBoost).

9. Building a Weather Dashboard

- Description: Use weather APIs to fetch and visualize real-time weather data for multiple locations.
- Skills Learned: API integration, visualization.
- Tools: Python (Requests, Matplotlib, Dash/Flask).

10. Multi-Model Sentiment Analysis

- Description: Create a sentiment analysis system using multiple models and compare their performance.
- Skills Learned: Ensemble learning, NLP, model evaluation.
- Tools: Python (HuggingFace Transformers, TextBlob).

11. Object Detection in Real-Time Video Streams

- Description: Implement an object detection system using YOLO or OpenCV for real-time video feeds.
- Skills Learned: Computer vision, deep learning.
- Tools: Python (OpenCV, PyTorch/TensorFlow).

12. Building a Stock Trading Bot

- Description: Develop a bot that uses historical stock data and simple ML algorithms to make trading decisions.
- Skills Learned: Time series forecasting, algorithmic trading.

- Tools: Python (Pandas, Scikit-learn, Alpaca API).

13.Advanced Recommendation Systems

- Description: Develop a hybrid recommendation system combining collaborative filtering and content-based filtering.
- Skills Learned: Hybrid models, feature engineering.
- Tools: Python (Surprise, TensorFlow).

14.AI for Cybersecurity

- Description: Build a model to detect intrusions using network traffic data (e.g., UNSW-NB15 dataset).
- Skills Learned: Anomaly detection, classification algorithms.
- Tools: Python (Scikit-learn, TensorFlow).

15.Lockchain Data Analytics

- Description: Analyze blockchain transaction data to identify patterns and trends (e.g., Ethereum or Bitcoin data).
- Skills Learned: Big data analysis, time series analysis.
- Tools: Python (BigQuery, Pandas).

Instructions

- Upload day-to-day work in the WhatsApp group. Take reference from any source.
- Send the projects via GitHub links.
- Create a repository named **Q Techsolutions Internship** in GitHub.
- Attendance is mandatory to complete the internship and receive the certificate.
- Apply for leave in advance (at least one day prior) via the app or inform the Reporting Manager in the WhatsApp group.
- Report pending tasks to the Reporting Manager as per the assigned date; the schedule may be adjusted accordingly.
- Work process meetings will be scheduled every three to four days as needed.

- Respond promptly to calls and messages from the team.

(Note: Sunday is a holiday and does not count as a working day.)

Thank You, Best Regards, Q Techsolutions