Data Science Capstone Project

A detailed technical report on the data science journey

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Executive Summary

- Briefly outline the project goals, key findings, and conclusions.
- Summarize the outcomes of the project, such as predictive analysis results and innovative insights.
- Highlight key technical milestones achieved.

Introduction

- Provide an overview of the problem statement and objectives of the project.
- Introduce the methodology and technologies used (e.g., Python, SQL, EDA, Folium, Plotly Dash).
- Explain the structure of the presentation and how each section relates to the overall project.

Data Collection and Wrangling Methodology

- Detail the data sources and the process of gathering the data.
- Explain the data wrangling techniques used to clean and prepare the dataset.
- Include code snippets or images if applicable.

Exploratory Data Analysis Methodology

- Describe the exploratory data analysis process.
- Discuss the tools and libraries used (e.g., Pandas, Matplotlib, Seaborn).
- Explain how interactive visual analytics were conducted.

Exploratory Data Analysis Results

- Show key insights found during EDA.
- Use visualizations to represent data distributions, correlations, etc.

EDA with SQL Results

- Discuss the use of SQL queries to extract insights from the data.
- Include examples of SQL queries and their results.

Interactive Map with Folium

- Explain the creation of an interactive map using Folium.
- Show screenshots or embed code snippets to demonstrate map functionality.

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images/folium_map.jpg
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Interactive Dashboard with Plotly Dash

- Discuss how the dashboard was built using Plotly Dash.
- Highlight key features and the insights derived from the dashboard.

Predictive Analysis Methodology

- Detail the methodology used for predictive analysis (e.g., classification techniques).
- Explain the steps taken to train, validate, and test the model.
- Mention any hyperparameter tuning or model selection techniques.

Predictive Analysis Results

- Present the classification results, including accuracy, precision, and recall.
- Include charts or confusion matrices to represent the model's performance.

Conclusion

- Summarize the outcomes of the project.
- Highlight key technical achievements and insights.
- Discuss potential next steps and improvements.

Creativity and Innovative Insights

- Highlight any innovative techniques or tools you applied beyond the template.
- Discuss any unique insights or approaches that added value to the project.