**MS in Applied Data Science - Portfolio**

**Name:** Sukhad Dnyanesh Joshi

* **Course: IST 652 - Scripting for Data Analysis**

Impact of Weather Conditions on Motor Vehicle Collisions in NYC: -

**Project Overview:**

This project analyzes over 100,000 motor vehicle collision records from NYC OpenData to study the impact of weather conditions on accident severity. Predictive models, including Logistic Regression and Decision Trees, were developed to identify patterns. The goal was to discover which weather factors most influence accident outcomes, such as injuries and fatalities. Interactive visualizations were created to make findings easy to understand. The project also emphasizes how external environmental factors can be critical in public safety analysis.

**Files in This Folder:**

|  |  |
| --- | --- |
| **File** | **Description** |
| Collisions\_weather\_analysis.ipynb | Main notebook with EDS and model building |
| Datasets- Collision\_Data.csv and meteostat package from python | Raw dataset of NYC collision records and Weather data library from python known as meteostat. |
| Poster.pdf | Interactive poster summarizing findings |
| README.docx (IST 652 Walkthrough) | Project documentation (this file) |

**GitHub Repository:**

<https://github.com/SukhadJoshi/MS-ADS-Portfolio_Sukhad-Dnyanesh-Joshi>

**Software Requirements:**

* Python 3.10 or later
* Jupyter Notebook
* Libraries: pandas, scikit-learn, matplotlib, seaborn

**How to Review:**

1. Open Collision\_Weather\_Analysis.ipynb in Jupyter Notebook.
2. Import and then install all of the required libraries before running the code.
3. Once installed, run through the EDA, modeling, and visualizations.
4. Review the Poster.pdf for a summary visualization of findings.