# Accidents Prevention & Preparation

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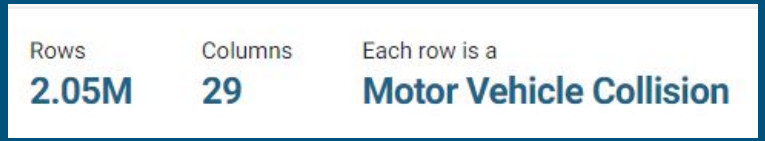
# The Problem

- Given different driving conditions such as the traffic, location or the time/season, it can impact the accident statistics and often increase it
- However, the city is usually not prepared to quickly respond to the increased accidents that can happen due to fluctuations in number of driver on the road or some areas where it might be very accident prone which can block roads and create additional problems for driver
- The increased response time can also affect death rates in accidents
- Here, we want to examine ways to help prevent against or prepare for such conditions

# The Dataset

- Sourced from NYC Open Data portal for Motor Vehicle Collisions.
- Includes columns for date/time, location, causes, vehicle types, injuries, and fatalities.
- Large volume of data detailing incidents over extensive time periods.
- Features granular details suitable for in-depth analysis and real-time updates.




https://data.cityofnewyork.us/Public-Safety/Motor-Vehicle-Collisions-Crashes/h9gi-nx95

# Methodology

- **Libraries:** folium, Seaborn, RandomForest, matplotlib, Pandas, LinearRegressor, flask etc.
- **Data Exploration and Preprocessing:** includes cleaning and feature selection for model training such as Linear Regression/ or Decision tree.
- **Feature Engineering:** Evaluation of algorithms based on accuracy, efficiency, and scalability.
- **Dataset**: Final model to be trained on historical data for predicting accidents under various conditions such as features _columns: time, location, weather, individual killed/injured etc.

# Methodology Continued

- **Model Selection: Linear Regression, Random forest.**
- **Evaluation Metrics:** accuracy, precision, recall, F1-score, etc.
- Example: most occurred accident is usually close to bridge and busy roads.

# Overall Project Goals and Conclusion

- To create a trained model using the dataset.
- Use the model to predict numbers of accidents likely to happen based on a given region, time or season.
- The dataset is critical for understanding and analyzing traffic accident patterns.
- Anticipated model to aid public safety measures and city planning.
- Expected outcomes include improved emergency response times and strategies to reduce accidents.

Thank you!

Questions?