Analysis of Crash Data in NYC

Group 5 (the crash dummies)

Goals of Project

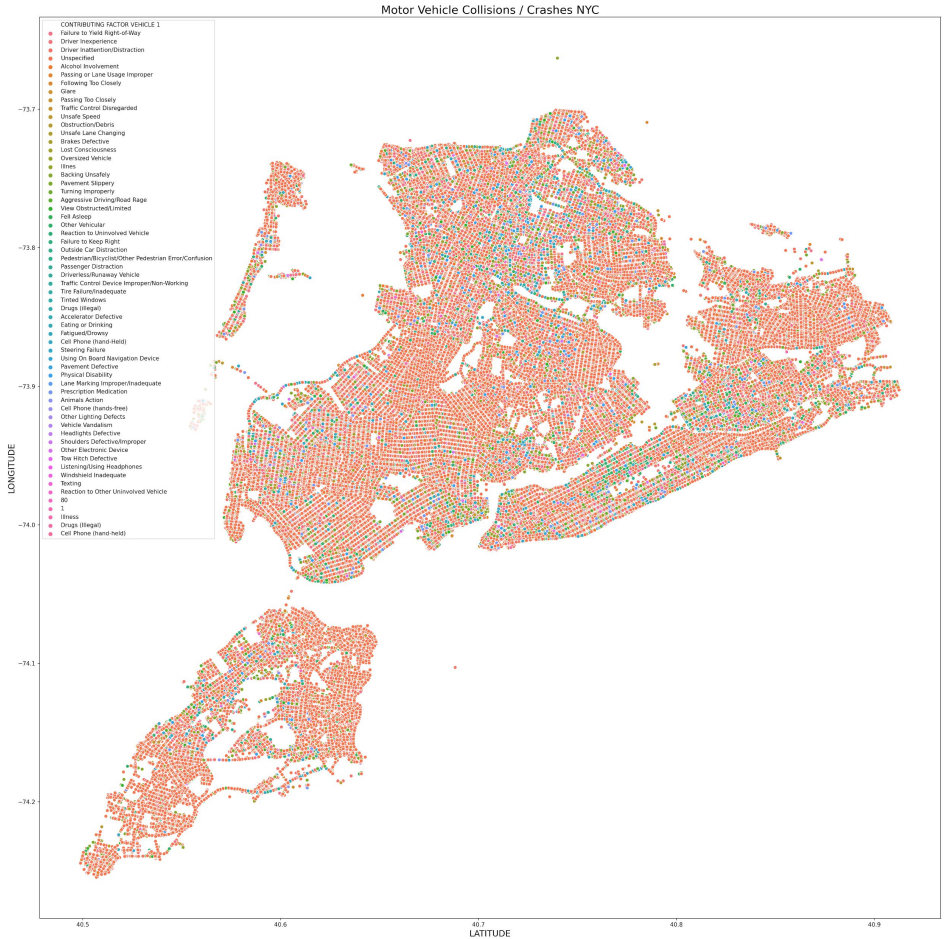
- Identify high risk factors within NYC traffic
- Create a map of risks based on geography and time
- Potential uses:
  - first responders to navigate the city during natural disasters and emergencies.
  - city planers to improve traffic performance.

Data Sources

Motor Vehicle Collisions in NYC

Speed Sensor data

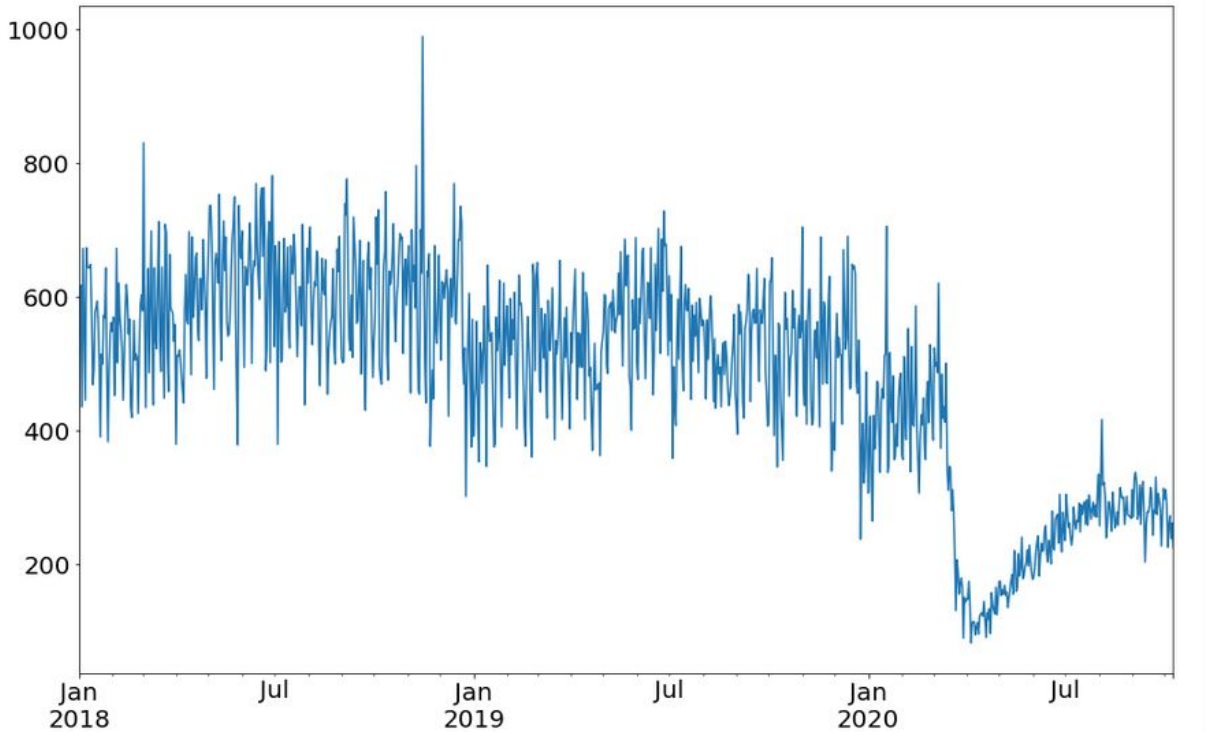
Crashes in NYC



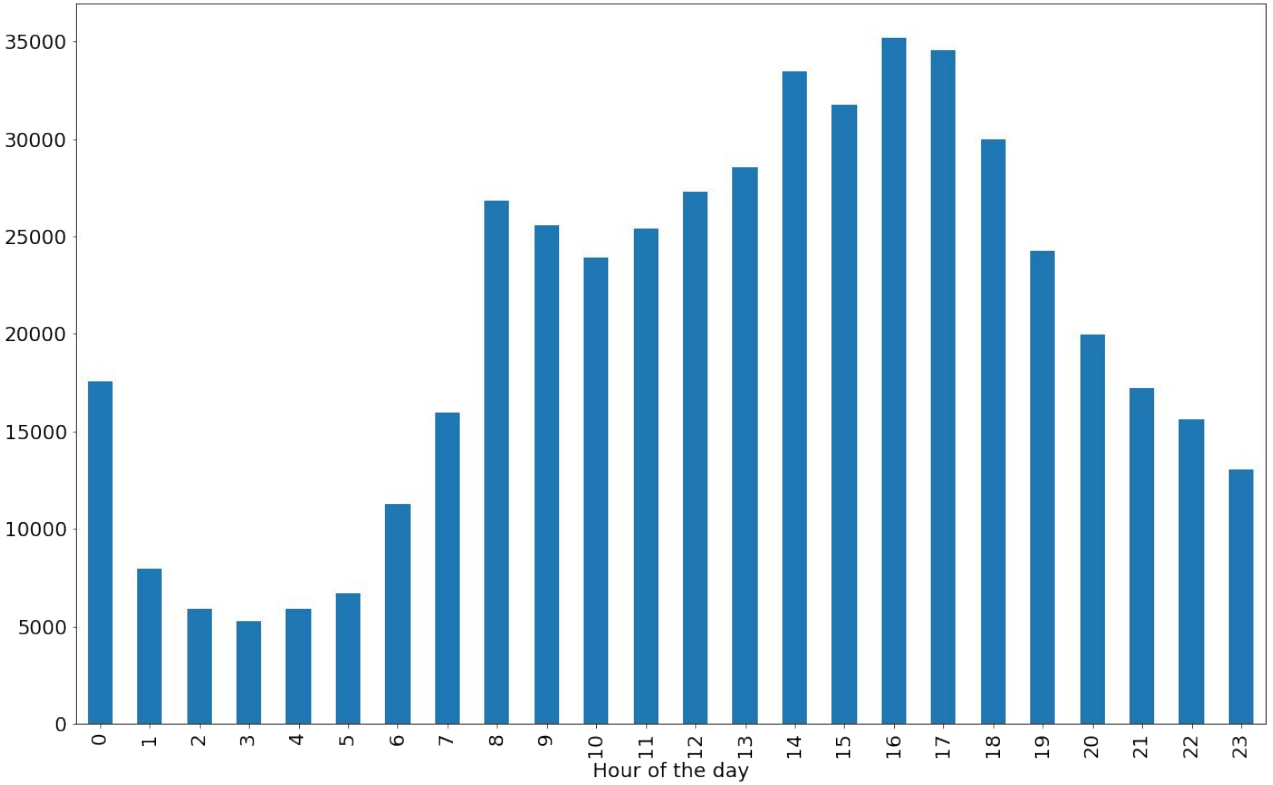
Lincoln tunnel

- Area around Lincoln tunnel highlighted by polygon.
- Map shows spatial distribution of crashes in 2019.

Crashes NYC - 2018 to 2020

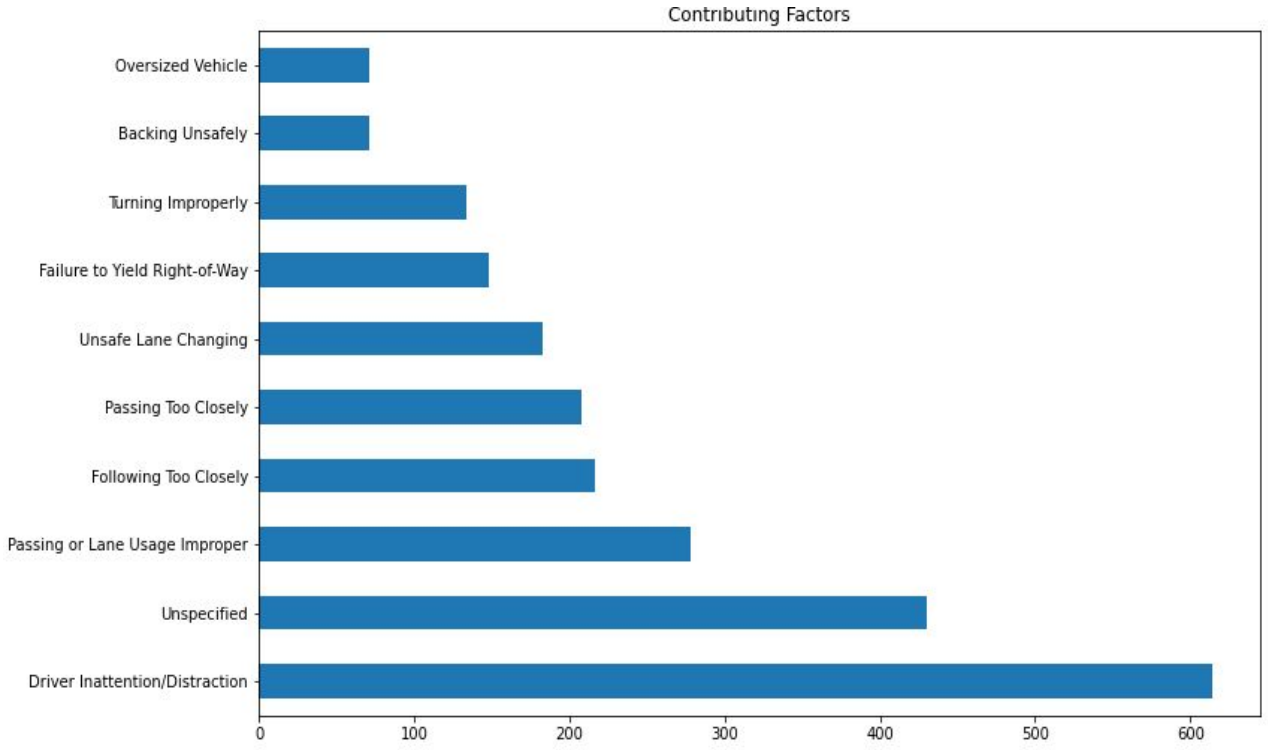


Crashes and time of the day

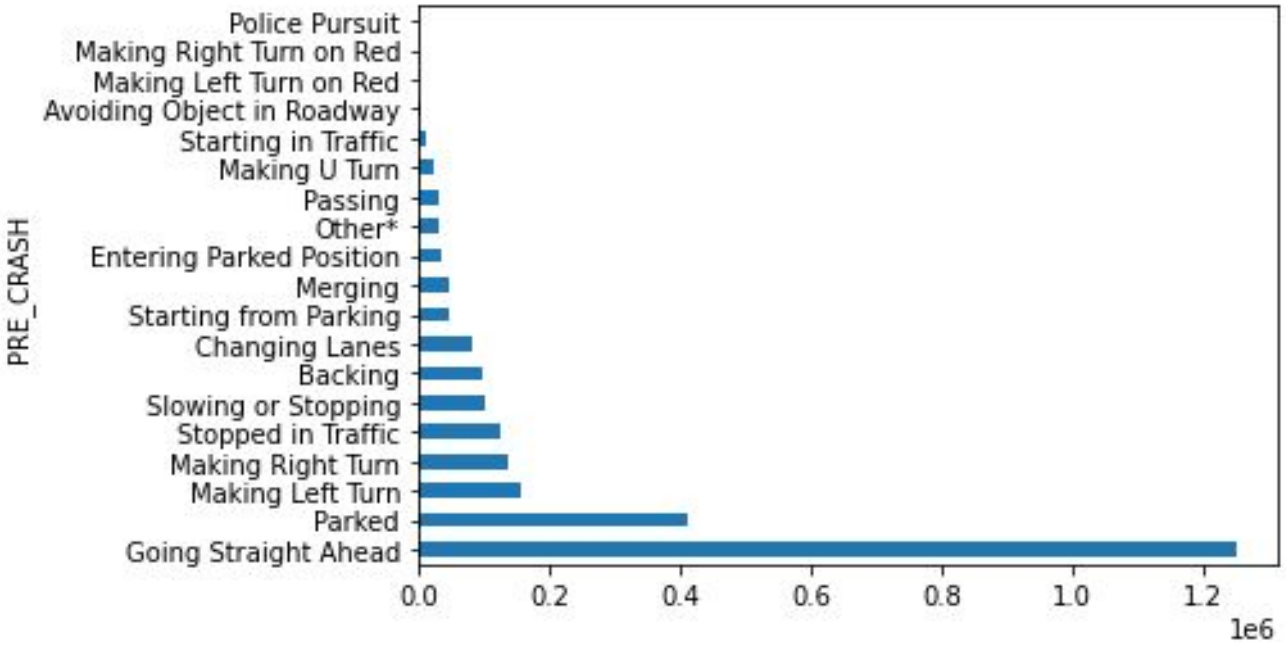


Top 3 Causes of crashes

1. Driver Inattention/Distraction
2. Passenger Distraction
3. Improper Passing or Lane Usage



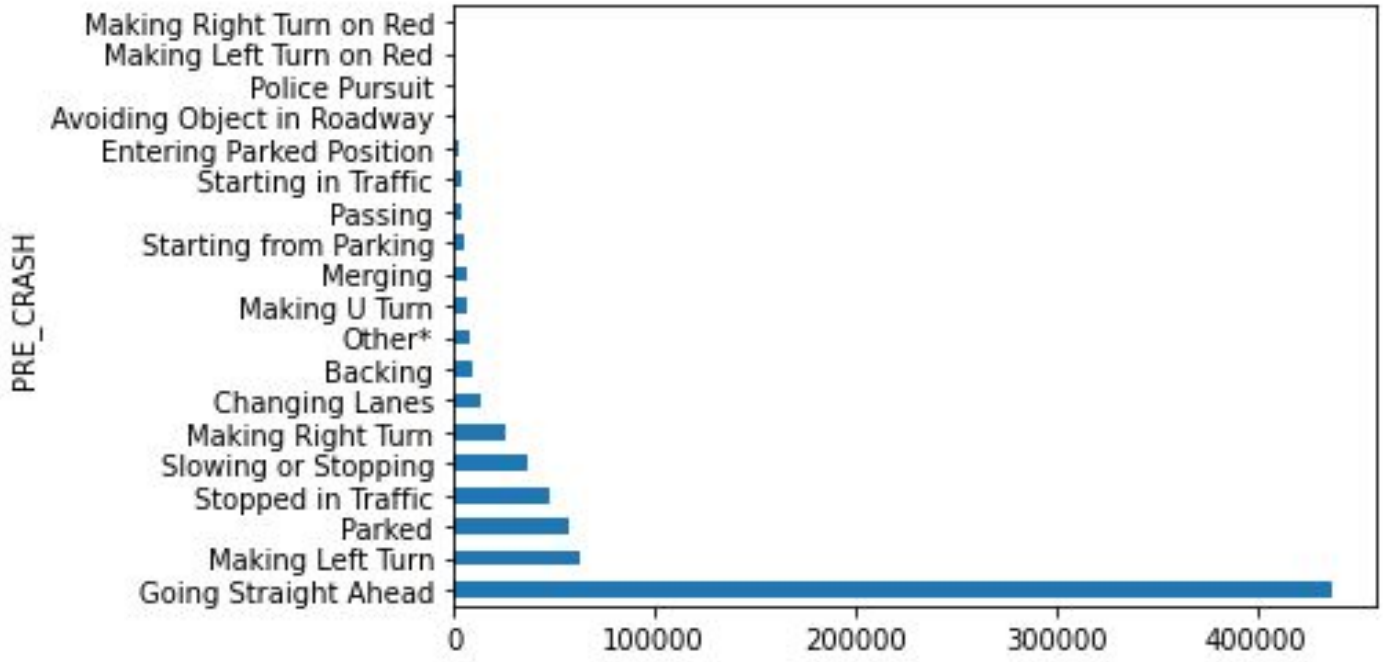
Crash Pre-Conditions



For most crashes, cars were in one of the following conditions:

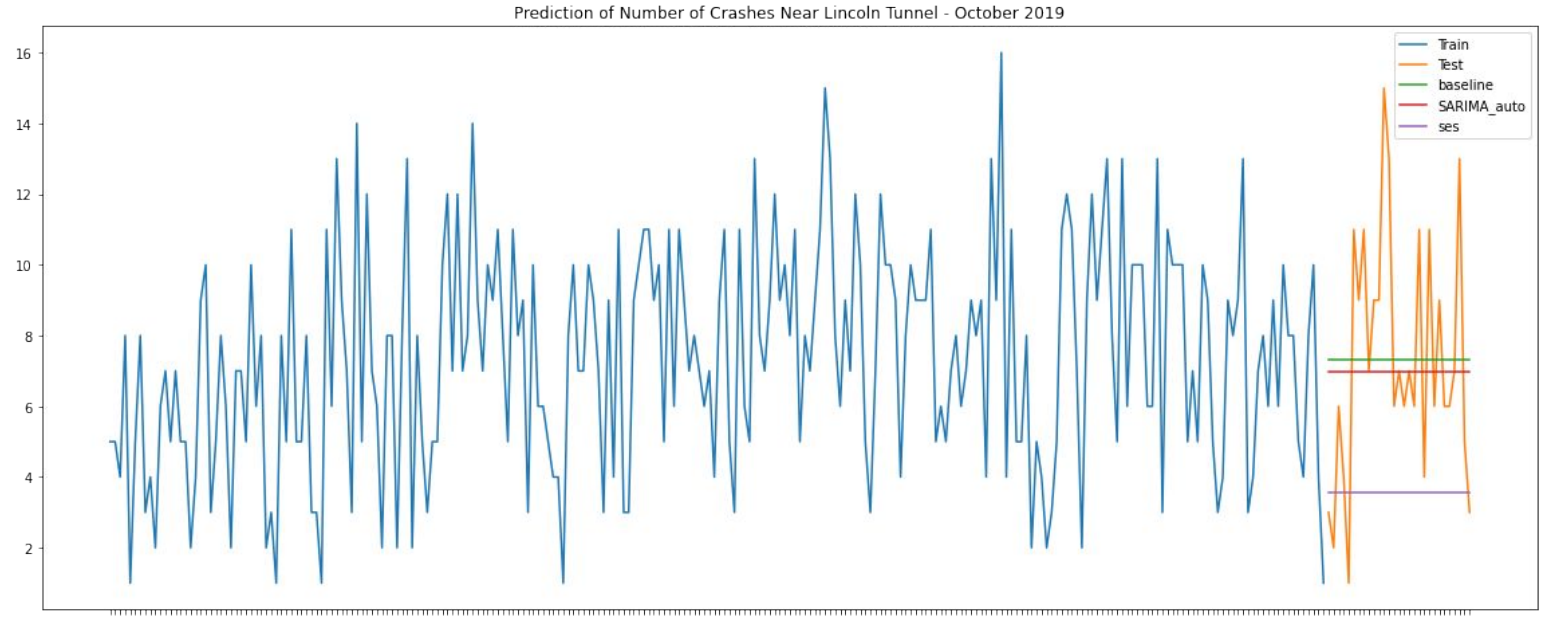
1. Going straight ahead
2. Parked
3. Making left turn

Pre-Crash Condition Weighted by Injury and Human Loss



Formula used: (4*Number of deaths + Number of injured persons)

Model Results



Model Metrics (MAE)

Baseline (Mean): 3.0

Auto SARIMA: 2.69

Simple Exponential Smoothing: 4.13