**Case 1 - Traffic Safety Improvement.**

**Business Problem:**In New York City there are traffic accidents resulting in injury or death to vehicle occupants, cyclists or pedestrians. The City of New York wants to implement measures to mitigate such accidents.

**Stakeholder:**Cityof New York.

**Solution:** Accidents can be grouped based on attributes such as location, death (Y/N), injury (Y/N), person involved (occupant, cyclist, pedestrian), vehicle types and contributing factors. Mitigating measures or the need for further investigation can be identified based on the attributes of the identified accident groups.

**Machine Learning Type:**Unsupervised learning – I envision using at least Clustering algorithms.

**Data Set:**[**https://data.cityofnewyork.us/Public-Safety/NYPD-Motor-Vehicle-Collisions/h9gi-nx95**](https://data.cityofnewyork.us/Public-Safety/NYPD-Motor-Vehicle-Collisions/h9gi-nx95)

**Case 2 - Bike Share Advertising.**

**Business Problem:**CitiBike have bike share stations throughout City of New York which have space for poster advertising and possibly electronic kiosk advertising. Citibike wants to know usage demographics of each station so that they can determine the value of their advertising space and know the advertisers to which they should market their space.

**Stakeholder:**CitiBike.

**Solution:** The bicycle trips can be grouped based on gender (M vs. F), age, start station, end station, and customer type.  Knowledge of station user demographics obtained from such grouping can be used to support the marketing of advertising space to organisations who sell to a particular demographic.

**Machine Learning Type:**Unsupervised learning – I envision using at least Clustering algorithms.

**Data Set:**[**https://www.citibikenyc.com/system-data**](https://www.citibikenyc.com/system-data)

**Case 3 - Police Resource Allocation.**

**Business Problem:**City of Chicago wishes to allocate policing resources such as extra patrols or awareness campaigns in an informed manner.

**Stakeholder:**Chicago Police Department.

**Solution:** Incidents of crime can be grouped based on attributes such as physical location (house vs. street, etc.), arrest vs. no arrest, police district, date/time and type of crime. Knowledge obtained from grouping can be used to allocate appropriate police resources to address the identified groups of crimes.

**Machine Learning Type:**Unsupervised learning - I envision using at least Clustering algorithms.

**Data Set:**[**https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present/ijzp-q8t2**](https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present/ijzp-q8t2)