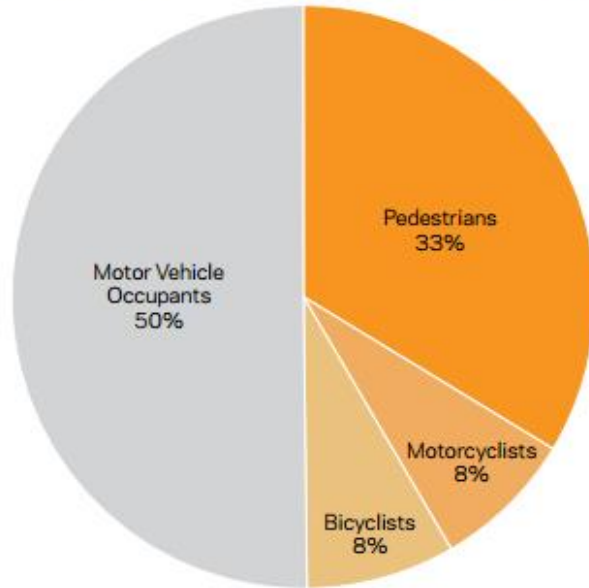
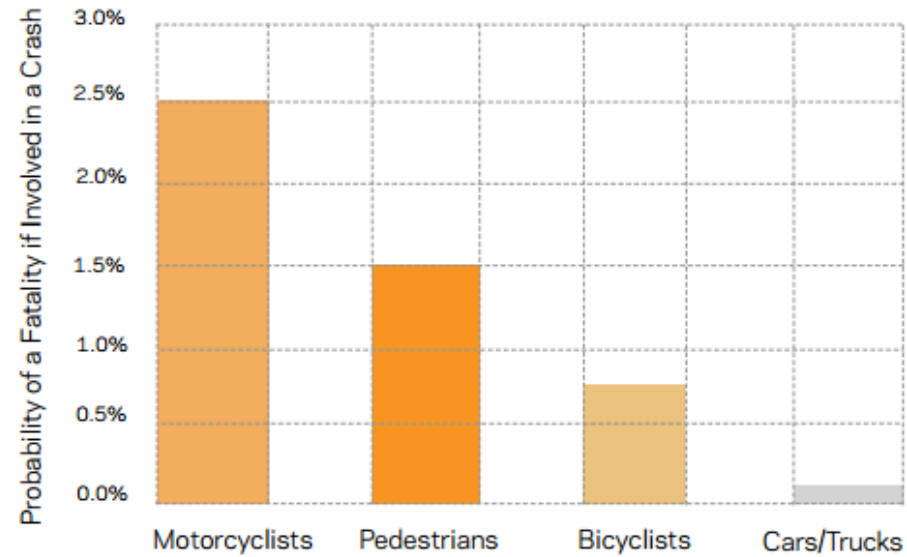


Problem: over 40000 injuries and 300 deaths per year in NYC

**Traffic Severe Injuries (2004-2008)**



**Probability of Fatality in a Crash (2004-2008)**



Burden on the economy: over \$5 Billion/year

Solution: Integrated analytical approach, in high resolution, to identify underappreciated risk factors associated with injury or death.

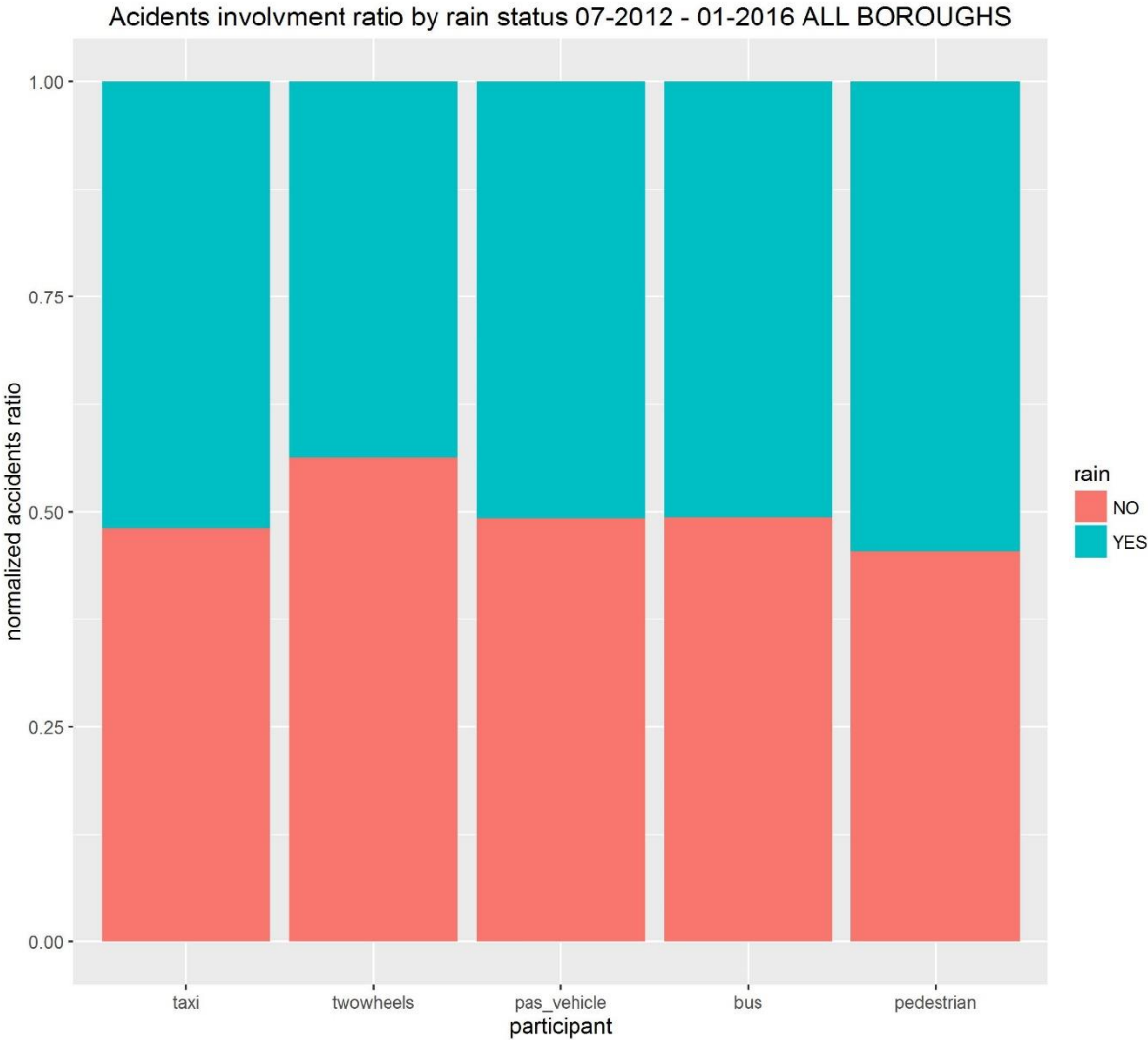
## Plan

- Collect data from various sources, NYPD, NCOAA, city.
- Apply machine learning/statistics to infer features from the data with maximal predictive power.
- Share and Visualize.

# Rain vs Injuries - correlation



# Accident involvement per road-user



Heatmap illustrating the dependency of various contributing factors on different crash types. The y-axis lists 50 contributing factors, and the x-axis lists 8 crash types. A legend indicates that red cells represent 'FALSE' (no dependency) and blue cells represent 'TRUE' (dependency).

Contributing factor vehicle 1

dependency (P<0.05)

FALSE

TRUE

Crash Types (X-axis):

- CYCLIST.INJURED
- CYCLIST.KILLED
- MOTORIST.INJURED
- MOTORIST.KILLED
- PEDESTRIANS.INJURED
- PEDESTRIANS.KILLED
- PERSONS.INJURED
- PERSONS.KILLED

Contributing Factors (Y-axis):

- Windshield Inadequate
- View Obstructed/Limited
- Unspecified
- Unsafe Speed
- Unsafe Lane Changing
- Turning Improperly
- Traffic Control Disregard
- Traffic Control Device Im
- Tow Hitch Defective
- Tire Failure/Inadequate
- Steering Failure
- Shoulders Defective/Impro
- Reaction to Other Uninvol
- Prescription Medication
- Physical Disability
- Pedestrian/Bicyclist/Othe
- Pavement Slippery
- Pavement Defective
- Passing or Lane Usage Imp
- Passenger Distraction
- Oversized Vehicle
- Outside Car Distraction
- Other Vehicular
- Other Lighting Defects
- Other Electronic Device
- Obstruction/Debris
- Lost Consciousness
- Lane Marking Improper/Ina
- Illness
- Headlights Defective
- Glare
- Following Too Closely
- Fell Asleep
- Fatigued/Drowsy
- Failure to Yield Right-of
- Failure to Keep Right
- Drugs (Illegal)
- Driver Inexperience
- Driver Inattention/Distra
- Cell Phone (hands-free)
- Cell Phone (hand-held)
- Brakes Defective
- Backing Unsafely
- Animals Action
- Alcohol Involvement
- Aggressive Driving/Road R
- Accelerator Defective