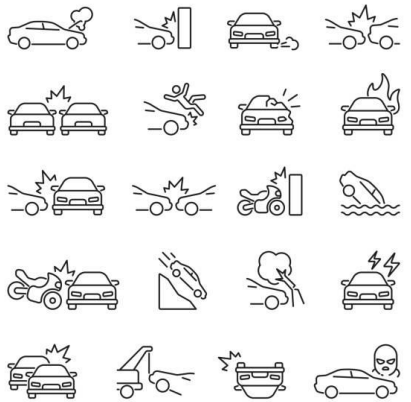


VISION ZERO: What causes Road Fatalities?

A METIS Classification Project:
Ipsita Banerjee, DSE

40,000

Each year more than 40,000 people are needlessly killed on American Streets

Motivation

Client

National Highway Traffic Safety Administration (NHTSA)

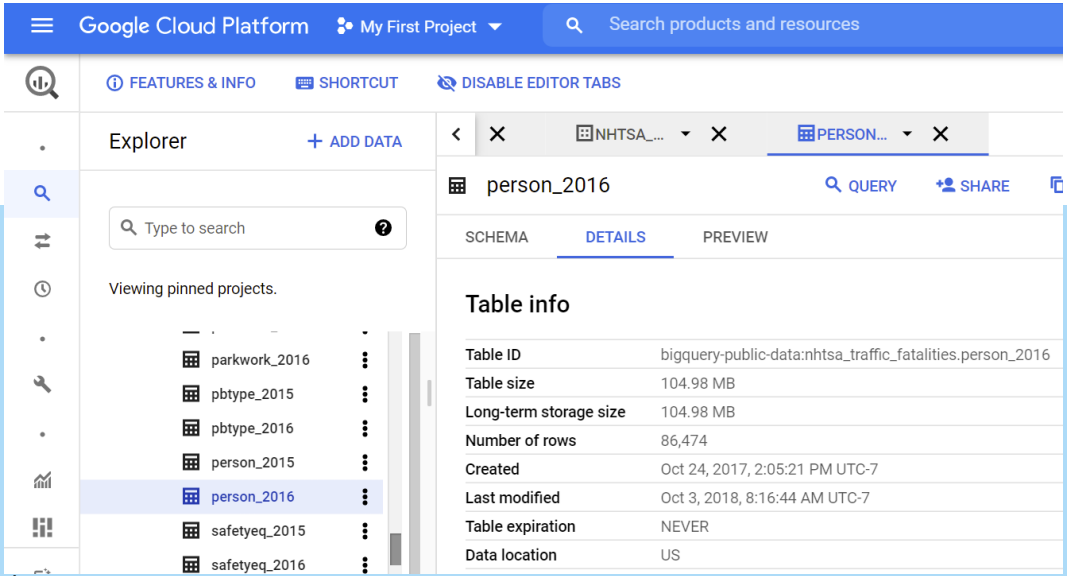
Goal

“eliminate all **traffic fatalities** & **severe injuries**”

Product

Interpretable classification model identify key aspects of potentially fatal crash to be corrected through policy

Data



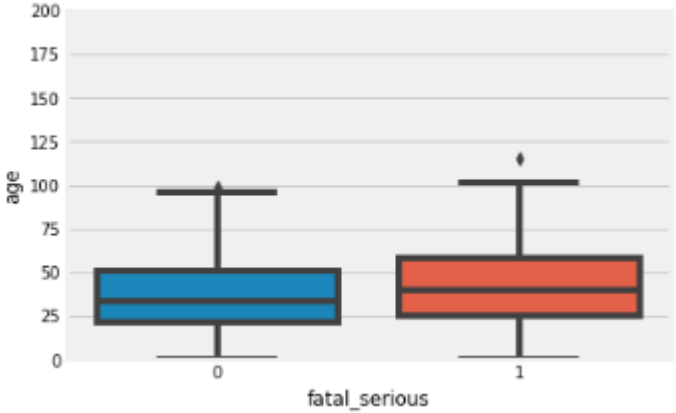
tempor.

Google BigQuery Public Data:

86474 rows
91 columns

Tools & Method

- Pandas, Numpy
- Sklearn, Statsmodel
- Seaborn, Matplotlib



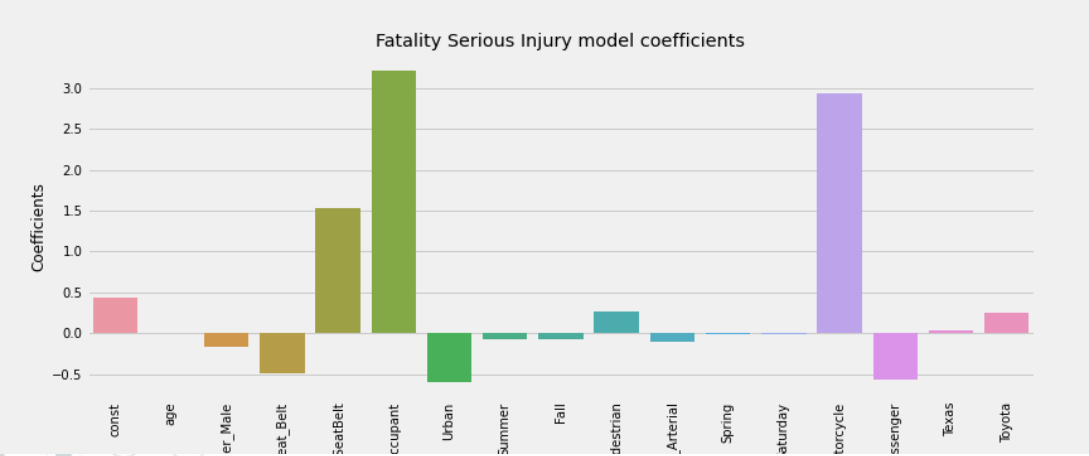
Logistic Regression Model with features based on feature importance of Random Forest Classifier

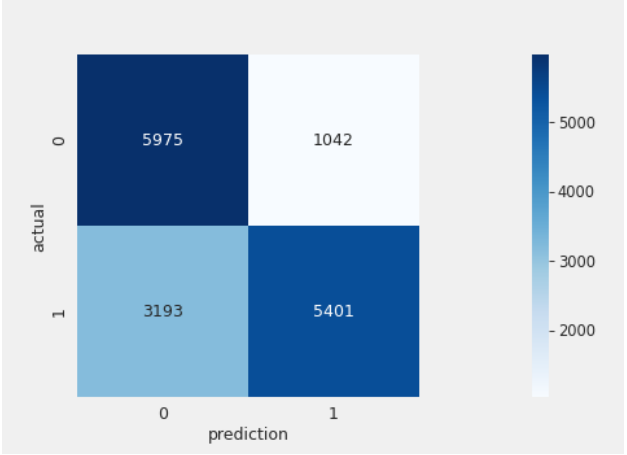
Target & Features

Balanced dataset

Results

- Accuracy: 0.732 (0.004)
- Precision: 0.8383
- Recall: 0.6285
- F1: 0.7184





Impact

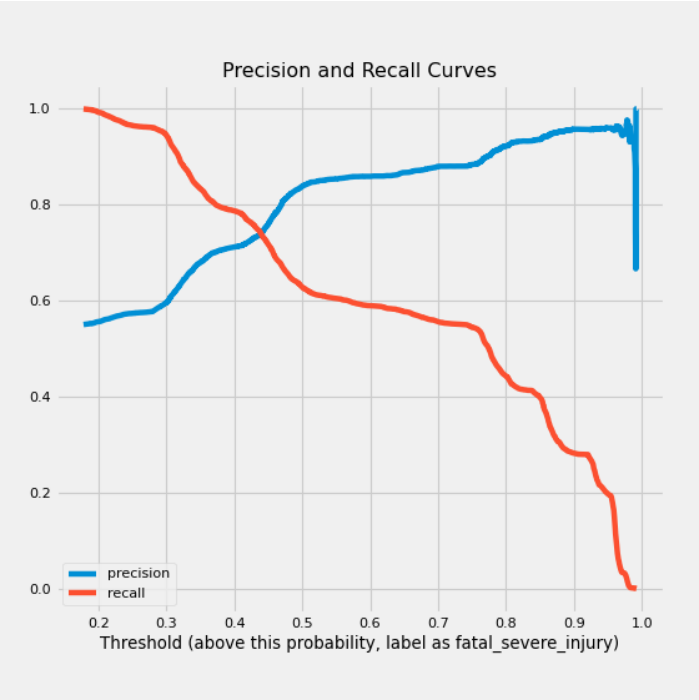
Achieving Vision Zero by identifying features leading to fatalities

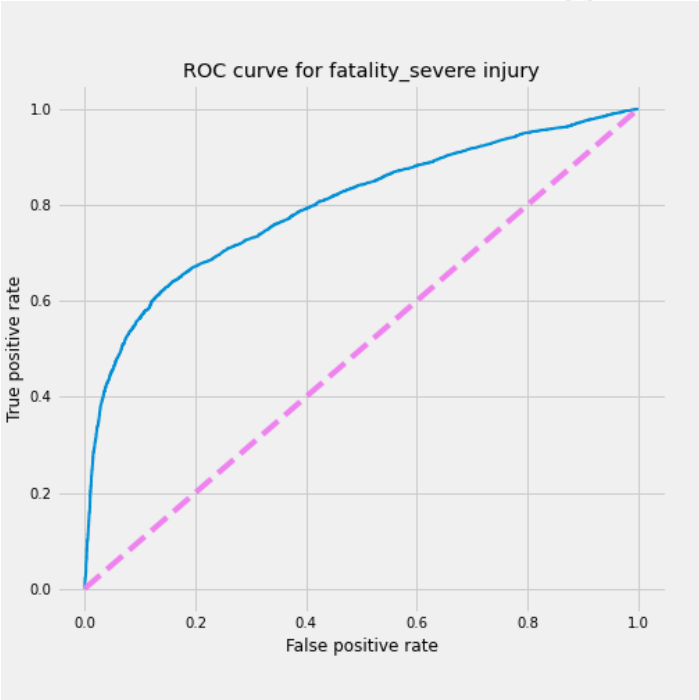
Future work

Add more features

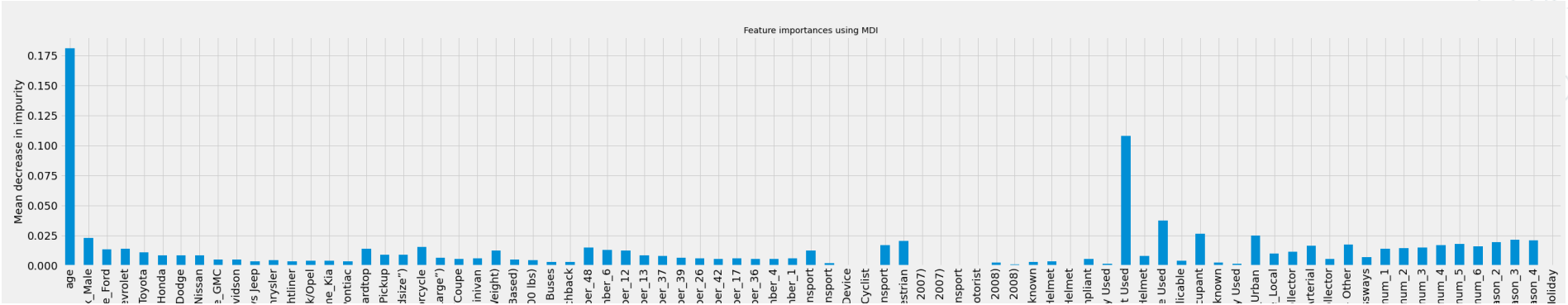
More feature engineering

Appendix: Precision-Recall, ROC curves





Appendix: Random Forest Feature Importance




Questions?