Accident Severity and Pedestrian Influence

By David Rudow

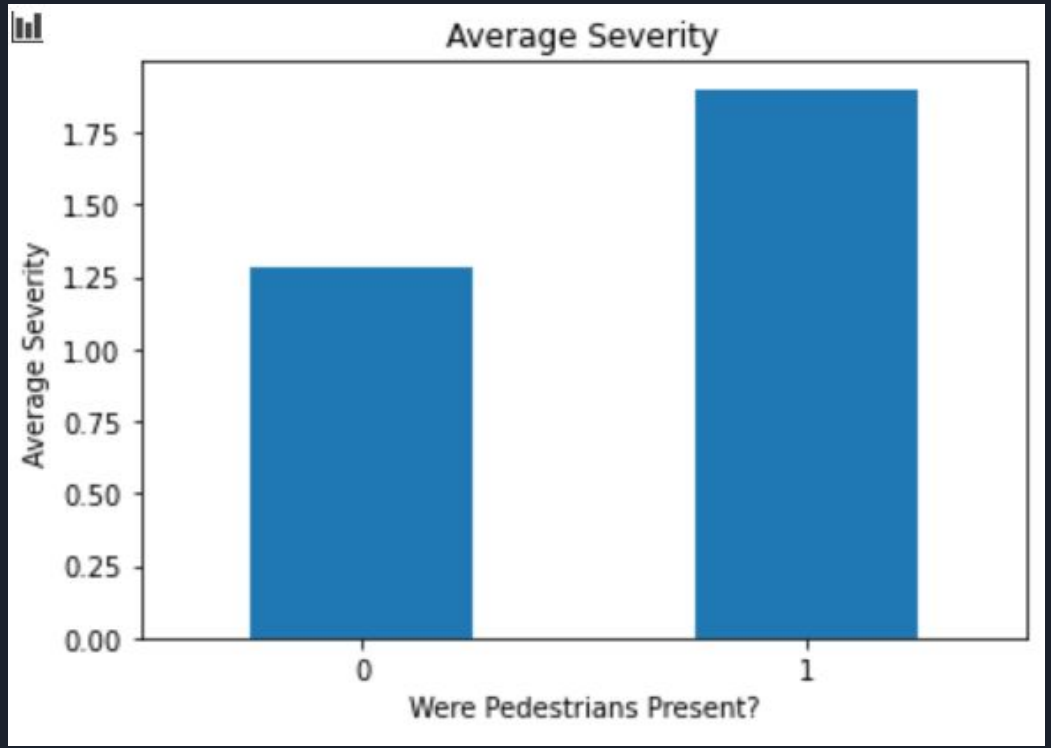
Predicting Accident Severity

- The growth of suburban America has been accompanied by an increase in traffic.
- This has contributed to an increase in pedestrian fatalities.
- Machine learning can help paramedics responding to accidents understand the severity of the accident.
- This project examine the effect of pedestrians and speeding on accident severity.

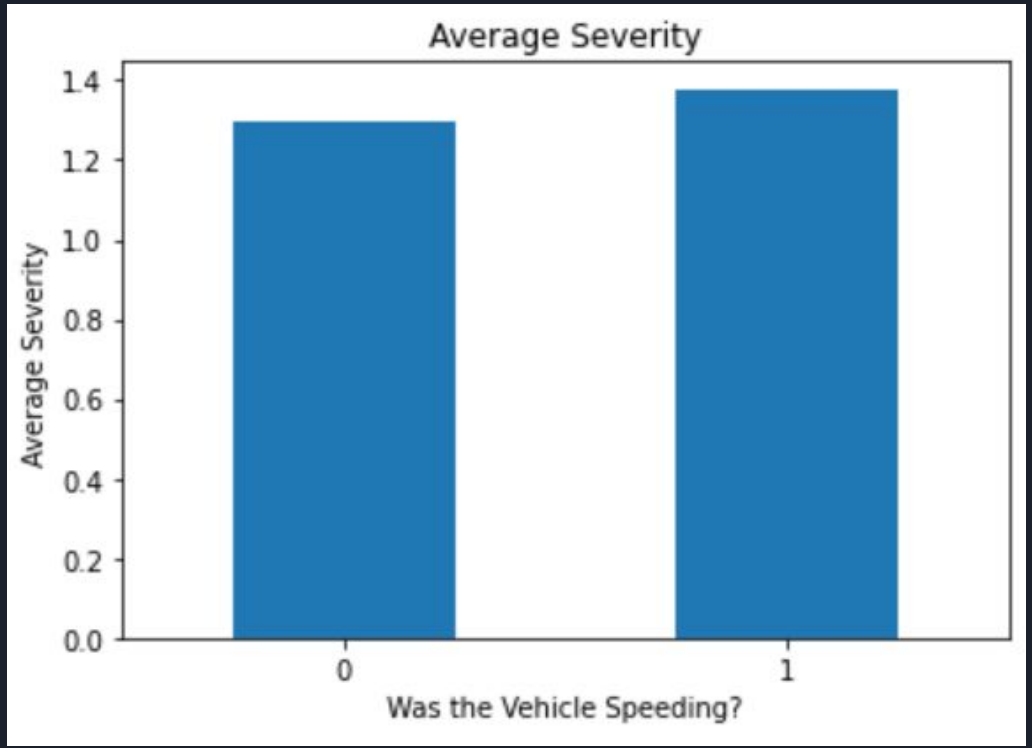
Data Acquisition and Cleaning

- Data pulled from Seattle Police Department (SPD) from 2004 to 2020.
- Pedestrian data and speeding pulled into dataframe.
- Y/N values converted to binary values.
- NaN values dropped.
- Binned pedestrian count into binary value.

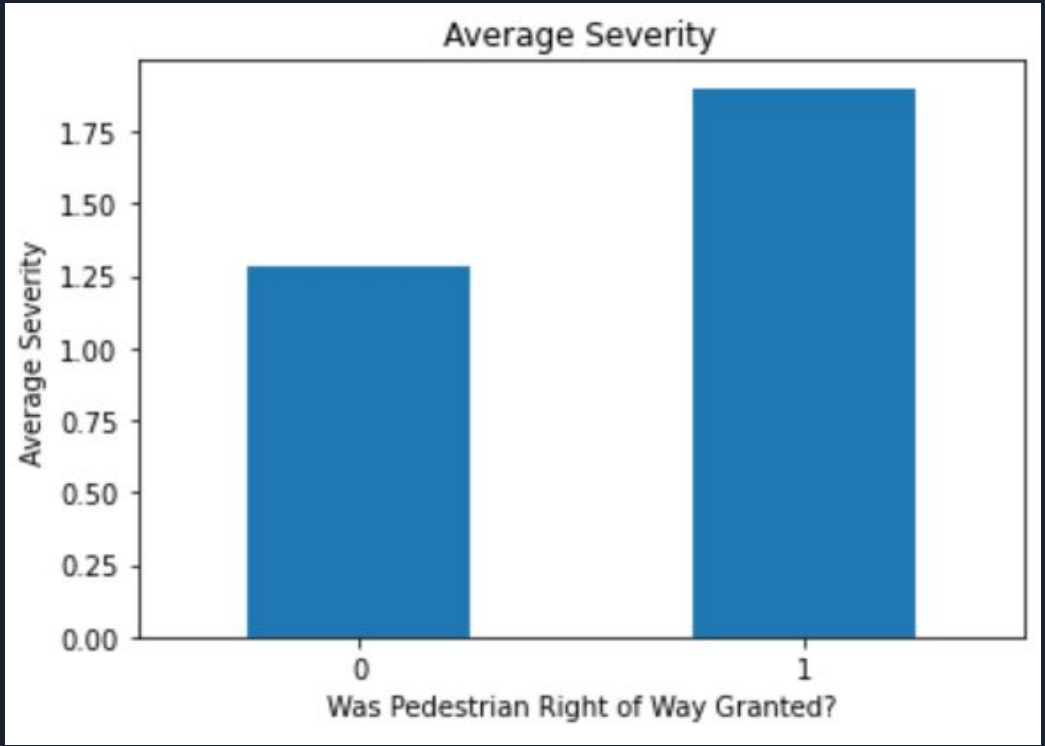
Pedestrian Presence



Vehicle Speeding



Pedestrian Right of Way



Machine Learning Results

Algorithm	Jaccar	f1-Score	Precision	Recall
Logistic Regression	0.73	0.85	0.78	0.74
Random Forest	0.75	0.85	0.78	0.74

Conclusion and Future Direction

- Built an accurate model to predict accident severity.
- Neural net analysis and data feature increase could help accuracy.
- More granular data would increase effectiveness of model.