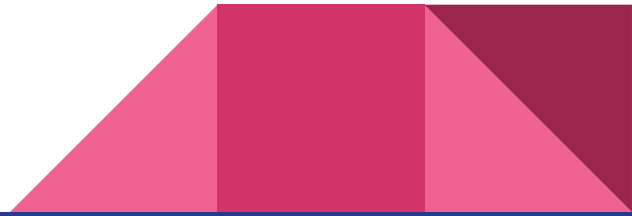
Chicago Car Crashes

Group 2:

Dillon Medd
Rashid Karriti
Seth Kaufman

Outline

- Business Problem
- Data and Methods
- Findings
- Results
- Further Investigation



Business Problem

- Chicago’s City Council wants to increase safety on Chicago’s roads.
  - With limited resources to invest, what are the most pressing issues we should recommend Chicago's City Council to decrease the number of injuries in an accident?

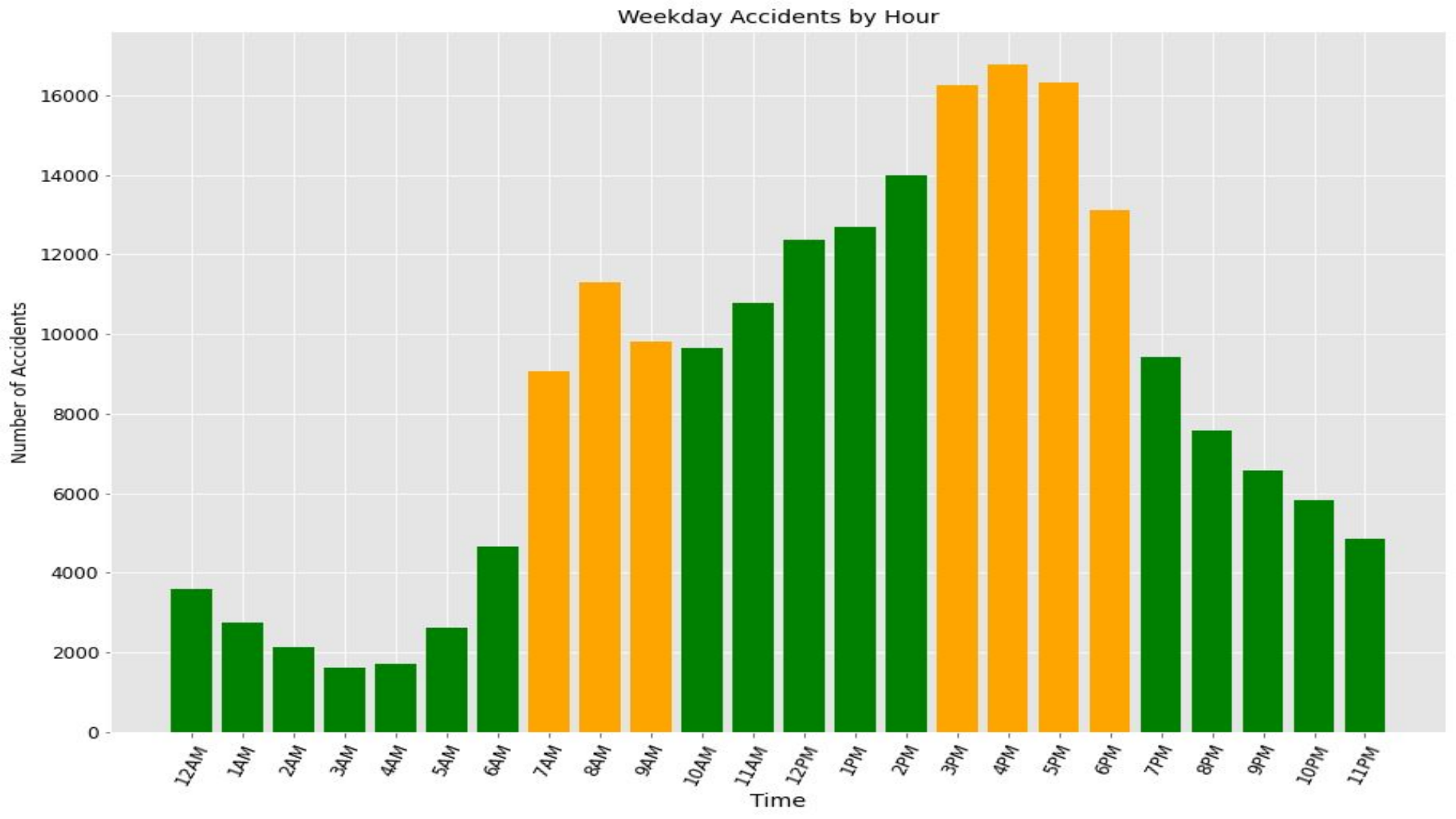
- They want to look at what type of crashes cause the most injuries

Data and Methods

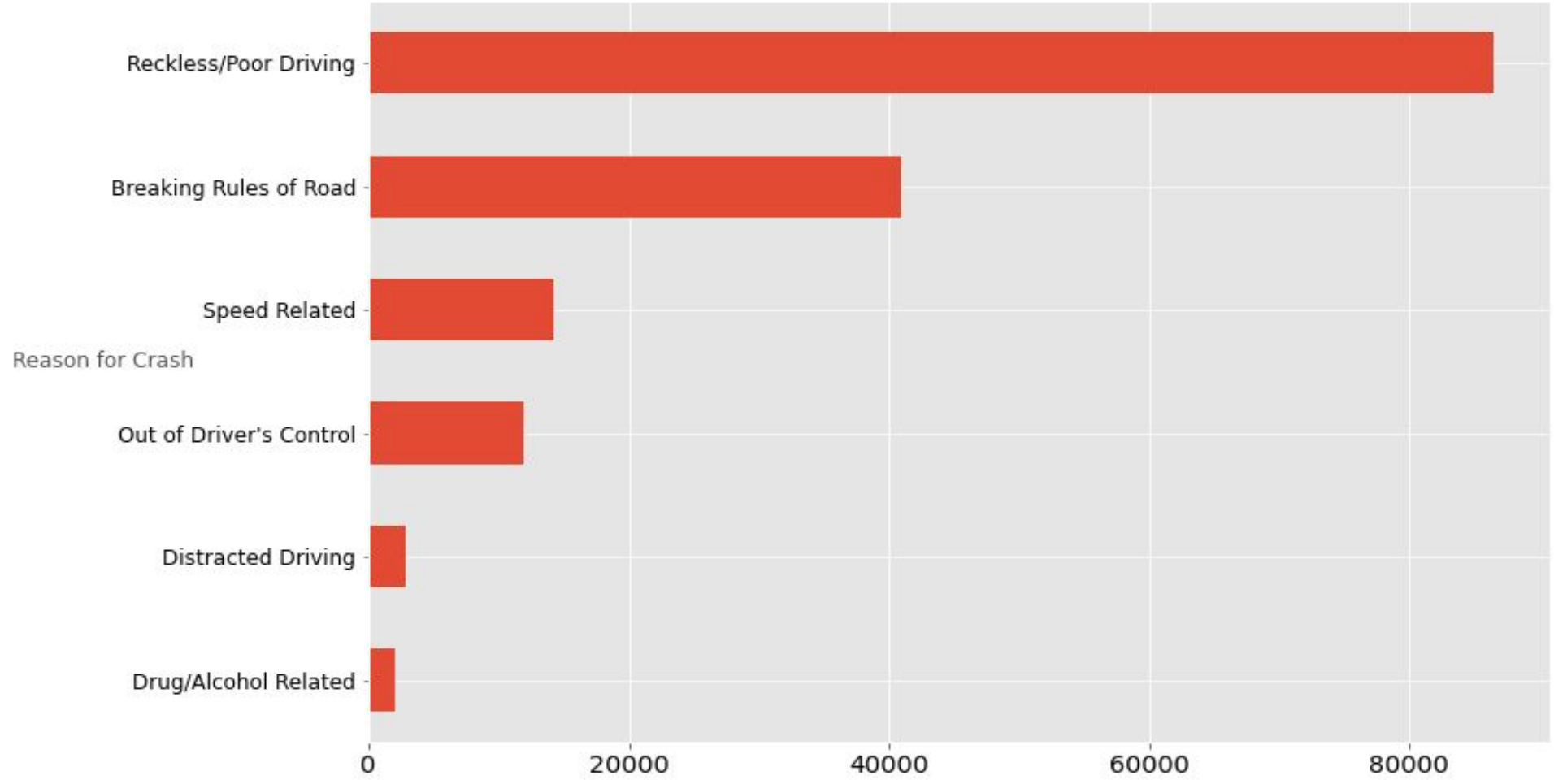
- Using Data from the City of Chicago Data Portal.
  - Stratified to Jan 1 2019 - Sep 12 2021
  - Building a model that best predicts the accidents that lead to injuries
- Main Features:
  - Target: Injury
  - Crash Type
  - Weather Condition
  - Time (Rush Hour, weekdays 7-10AM, 3-7PM)
  - Reason for Crash and Presence of a Road Defect

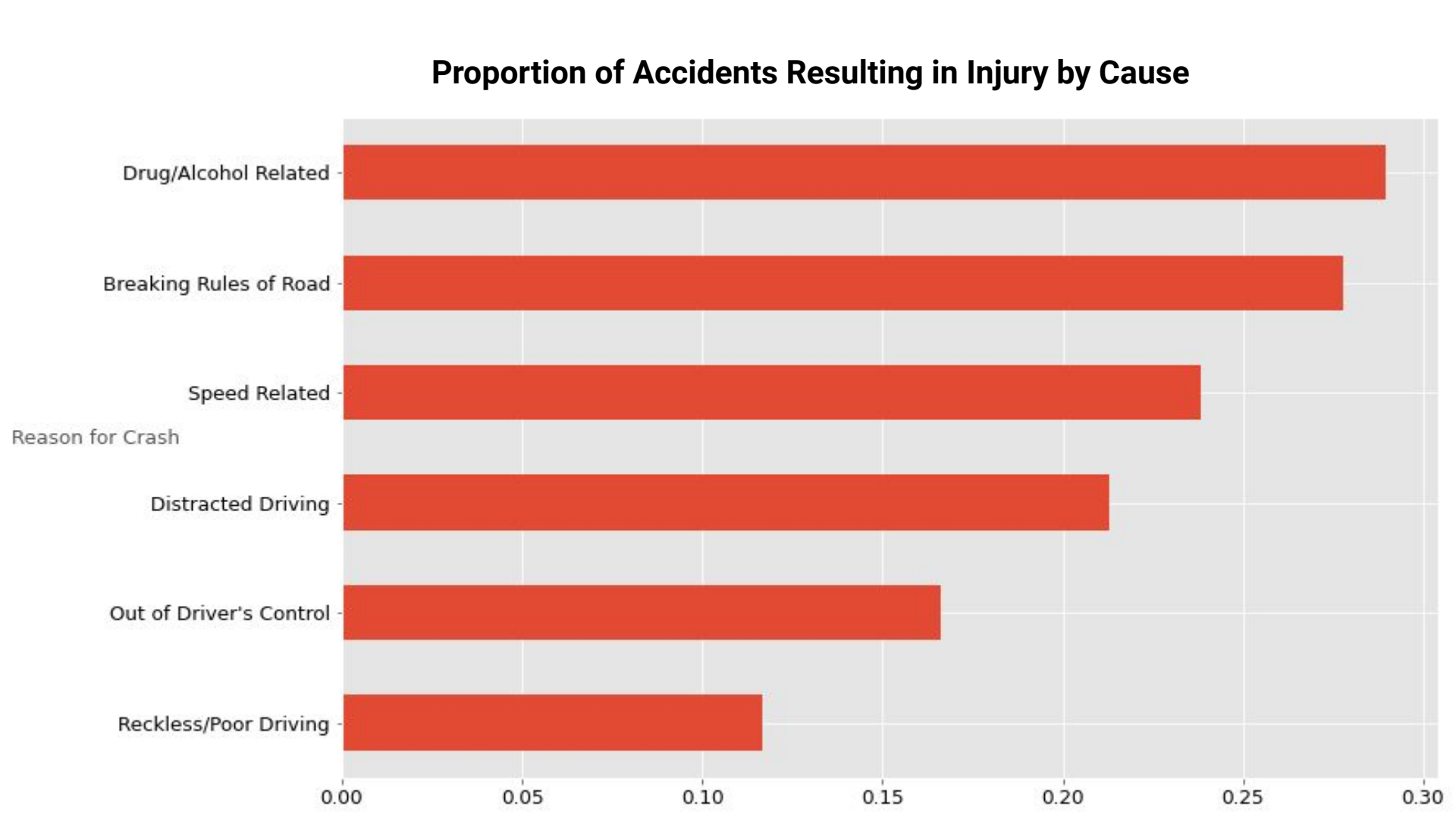
Findings

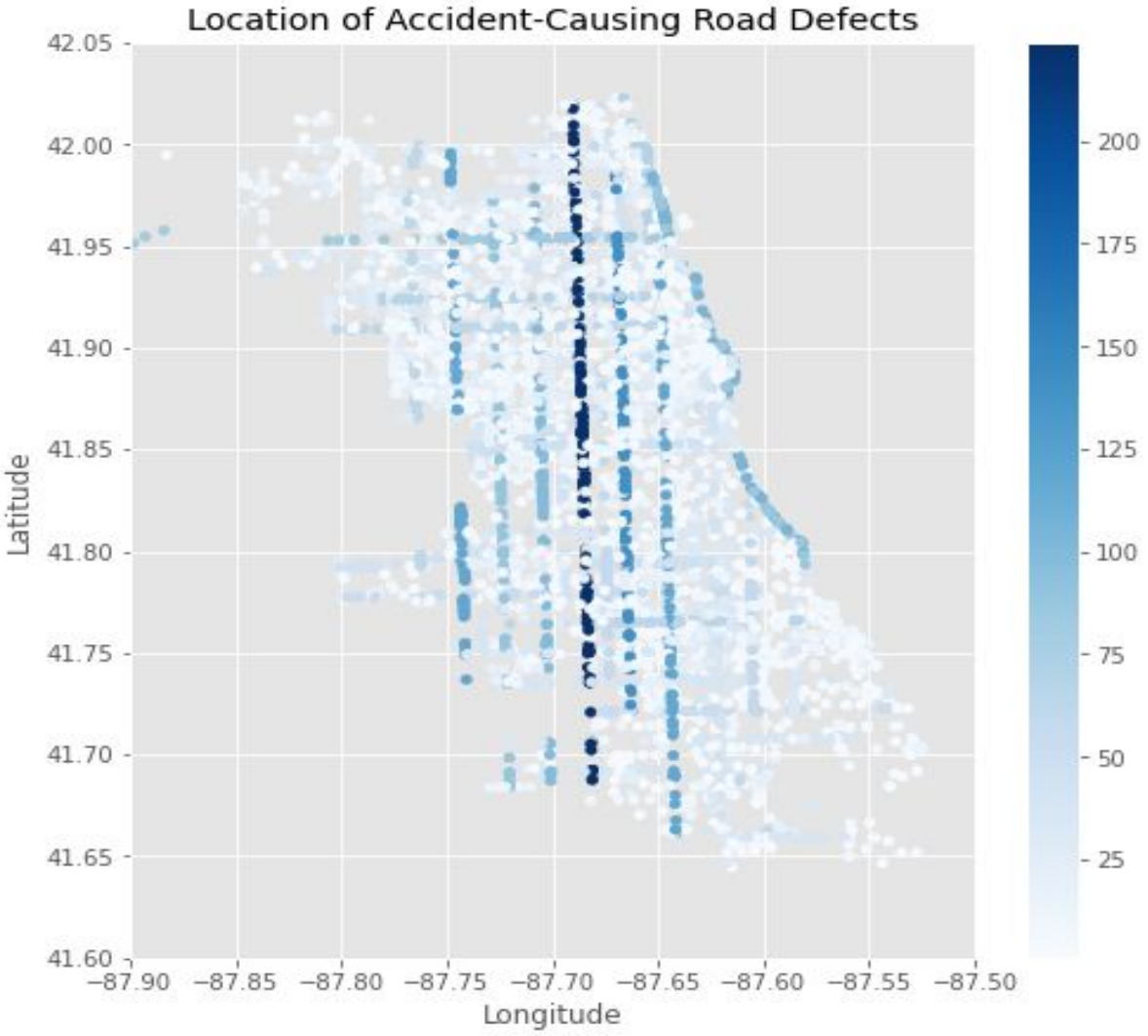
- Our Model has a *66%* success rate at predicting our target in relation to our features
- Large spike in accidents during rush hour (weekdays 7-10AM, 3-7PM)
  - *~36%* of accidents occur during this time
- Disobeying the rules of the road and drug/alcohol abuse lead to accidents that most often result in injury.


Weekday Accidents by Hour
Number of Accidents
0
2000
4000
6000
8000
10000
12000
14000
16000
12AM
1AM
2AM
3AM
4AM
5AM
6AM
7AM
8AM
9AM
10AM
11AM
12PM
1PM
2PM
3PM
4PM
5PM
6PM
7PM
8PM
9PM
10PM
11PM
Time

Amount of Crashes by Cause




Proportion of Accidents Resulting in Injury by Cause
Drug/Alcohol Related
Breaking Rules of Road
Speed Related
Reason for Crash
Distracted Driving
Out of Driver's Control
Reckless/Poor Driving
0.00
0.05
0.10
0.15
0.20
0.25
0.30



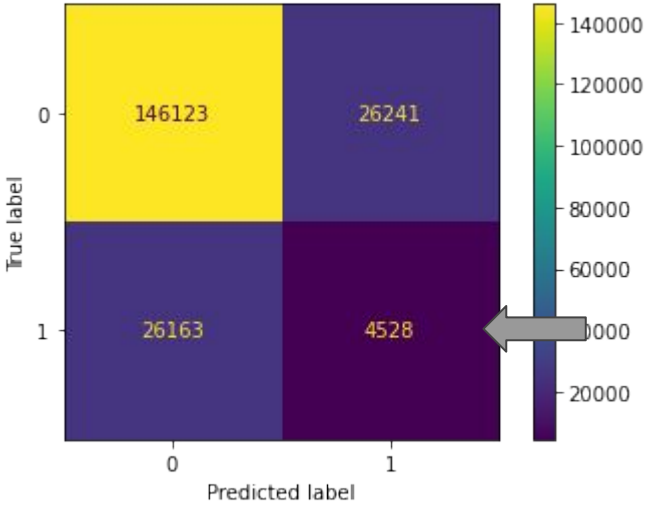
Streets with the most accidents caused by road defects

WESTERN AVE: 224
ASHLAND AVE: 141
HALSTED ST: 120
CICERO AVE: 119
LAKE SHORE DR NB: 105

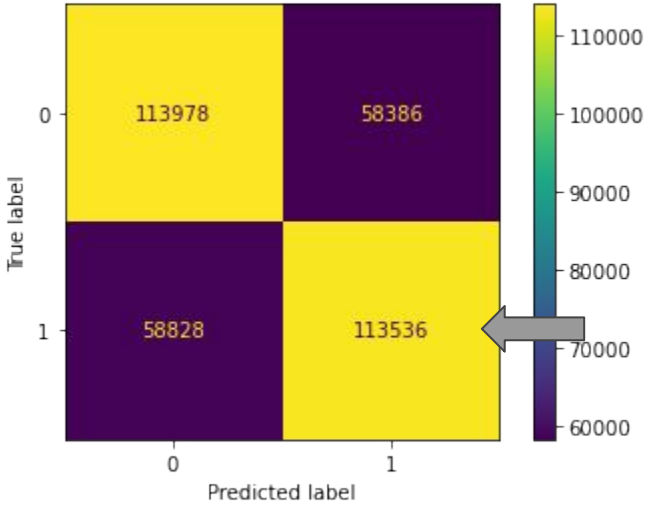
Recommendations

1. More visible/obvious traffic signs
2. Increase the delay between red light/green light
3. More resources toward drunk driving prevention and education
4. Quicker maintenance on most frequently used roads
5. Create safer and more reliable rush hour commuting environments and transportation options
6. Increase first aid responders on duty during these times

A Look Under the Hood



Baseline Model
15%



Best Predictive Model
66%

Future Investigation

What features can be added for better research:

- Location in relation to type of accident

- Weekend time breakdown

- Exploration of unknown variables

Thank You!

Rashid Karriti

Email:
rhk48@georgetown.edu

Github: rhk48

Dillon Medd

Email:
dillonmedd1@gmail.com

Github: dmedd98

Seth Kaufman

Email:
sethkaufman7@gmail.com

Github: SethKauf