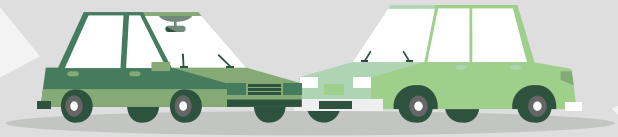
Forecasting NYC Car Collisions: Steering Towards a Safer Future

Time Series Analysis of the Leading Collision Causes of the Top 5 High-Risk Zip Codes in Queens & Brooklyn



About Me

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Annie Zheng
Data Scientist

Flatiron School
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Stony Brook University
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~10 Years of Customer Service Work Experience

Fun Fact: My family has 10 chickens

Agenda

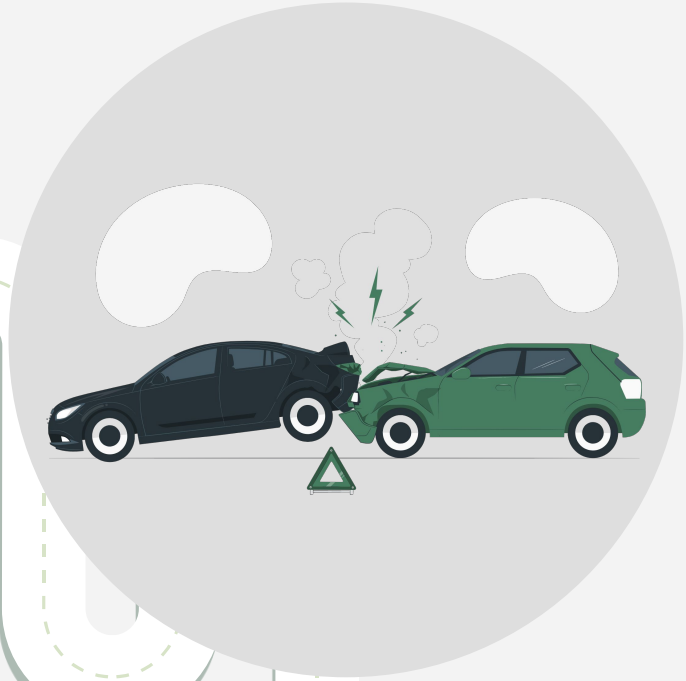
01 Business Understanding

02 Data Overview

03 Findings

04 Modeling & Recommendations

05 Future Insights



01

Business Understanding

Business Problem

Stakeholder

NEW YORK CITY DOT

Business Problem

Cause Identification & Collision Reduction within High-Risk Zip Codes

Bottom Line Up Front

11236
Brooklyn
1

11207
Brooklyn
2

11234
Brooklyn
3

11368
Queens
4

11385
Queens
5

Moving Violation
Daily Error:
±3 collisions

Driver Inattention
Daily Error:
±4 collisions

02

Data Overview

Data Overview

Source

NYC OpenData

NYPD

Data

- 2018-2023
- Queens & Brooklyn
- 42,108 Collisions

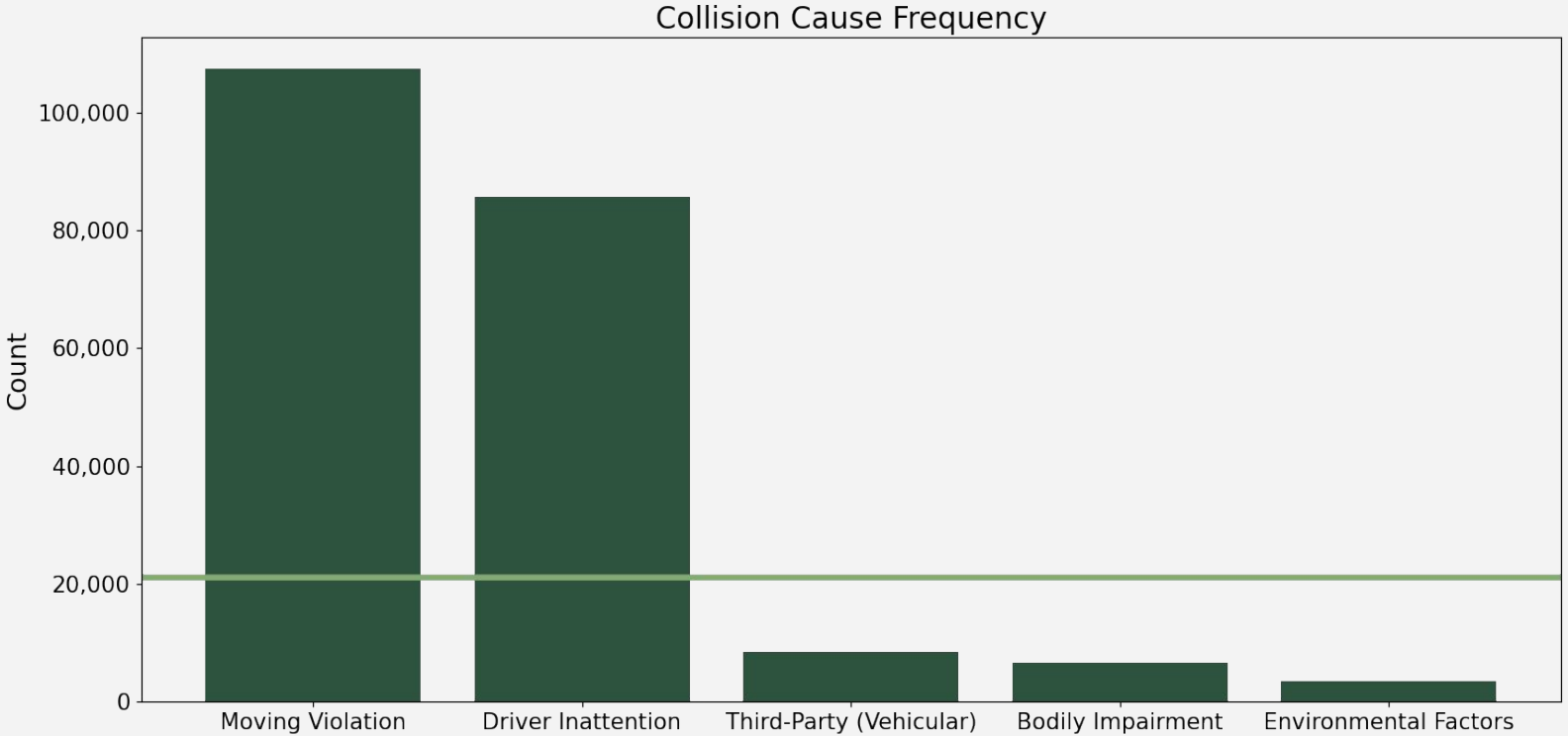
Filters

- Top Two Causes
- Top Five Zip Codes

Limitations

2020 COVID-19 Pandemic

Race to be #1: Moving Violation leads

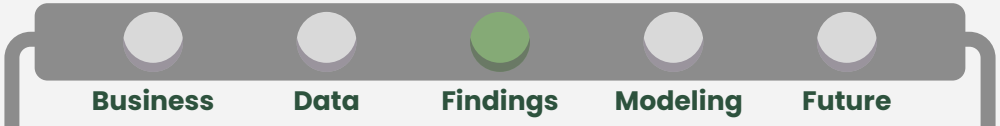


03

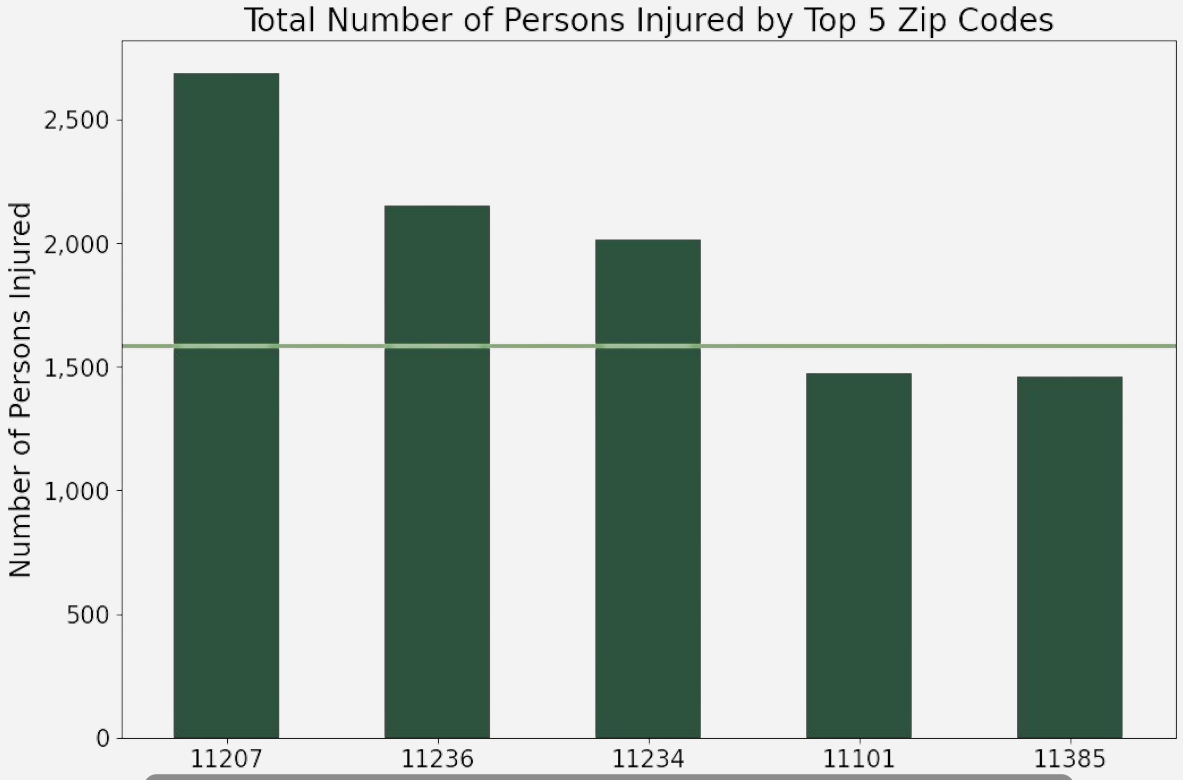
Findings

Brooklyn Tops the Injury Charts

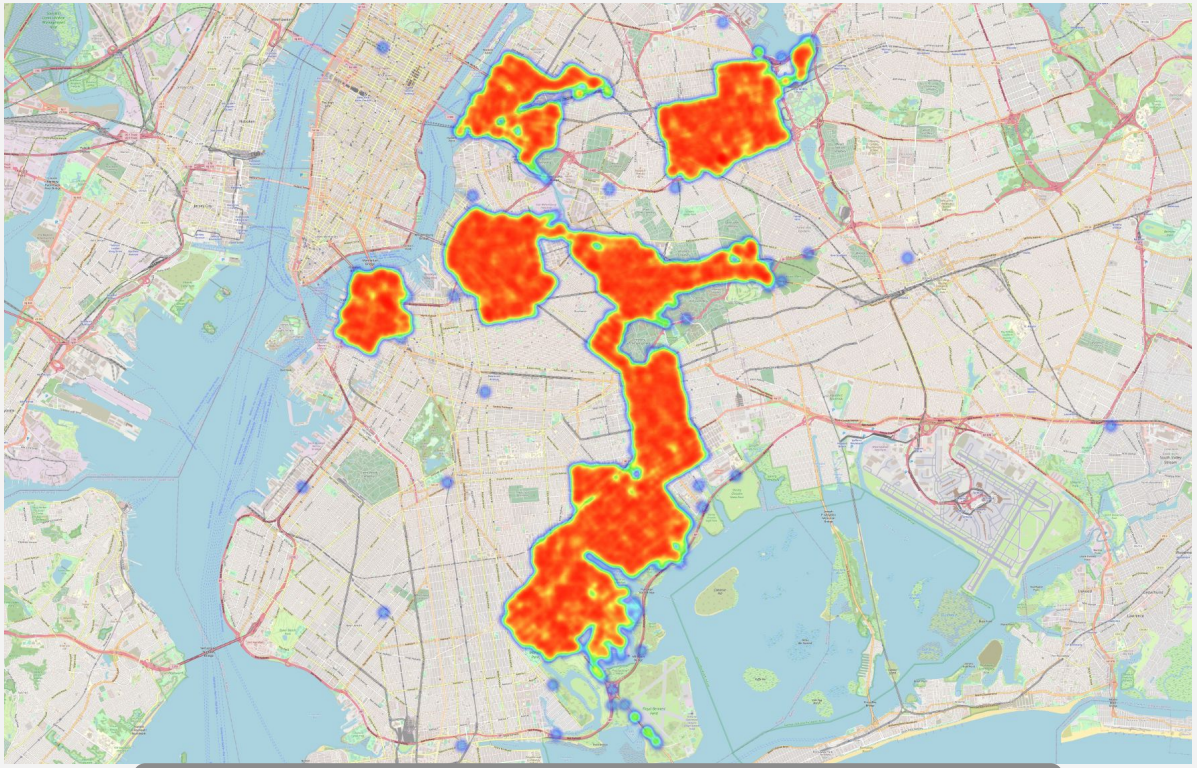
Borough	Zip Code	Injury Probability
Brooklyn	11236	51%
Brooklyn	11207	44%
Brooklyn	11234	43%
Queens	11368	35%
Queens	11385	34%



High Risk, Low Reward



Beware of Bridges, Ballparks, & Beaches

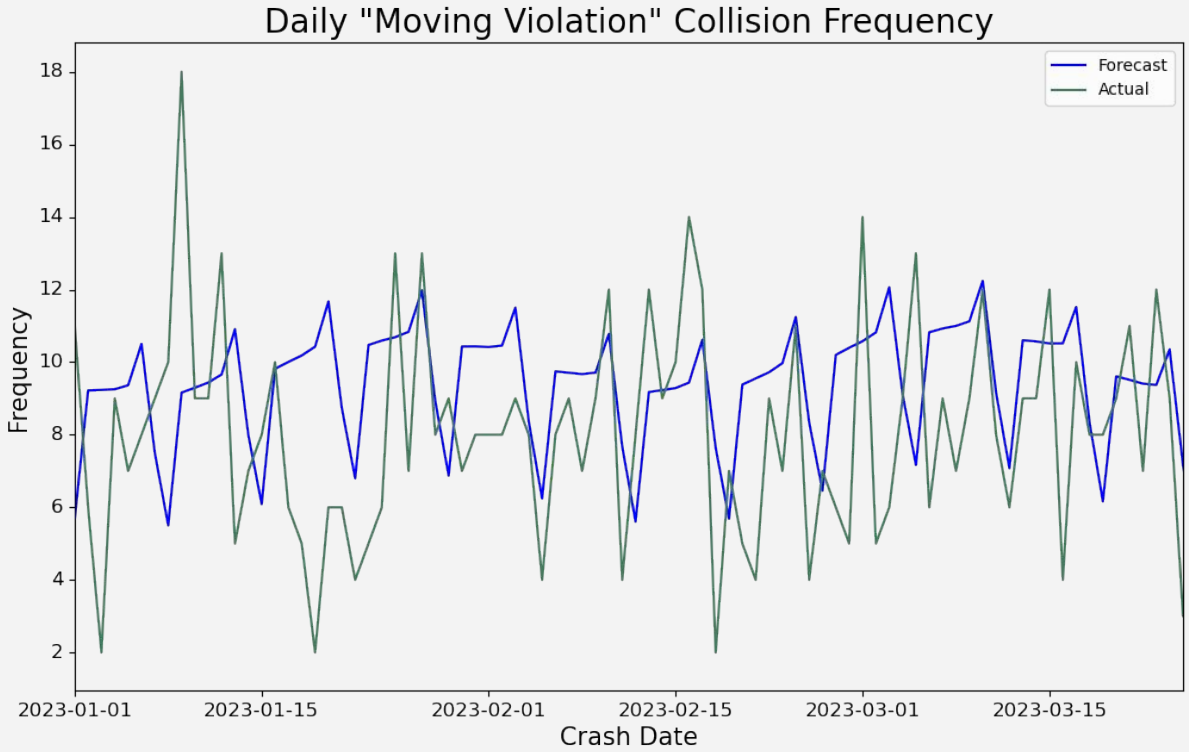


04

Modeling & Recommendations

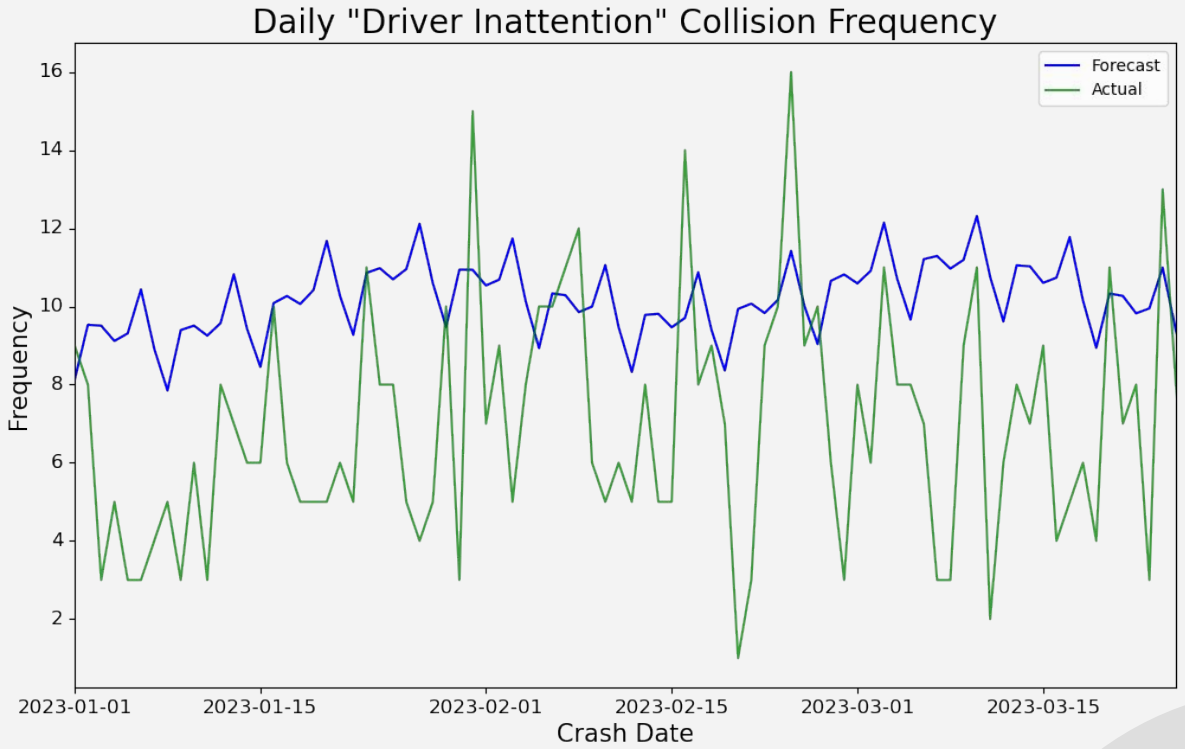
Forecast of 2023: Moving Violations

Daily Error: ±3 collisions



Forecast of 2023: Driver Inattention

Daily Error: ±4 collisions

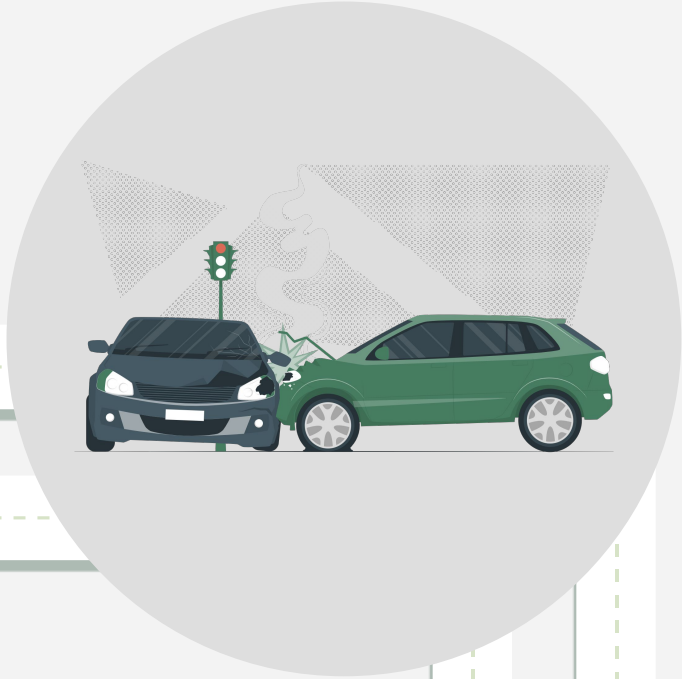


Recommendations

Safety Campaigns

Improve Public Transit

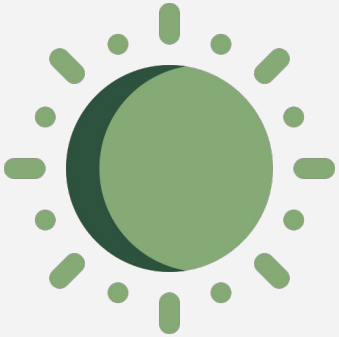
Training Programs



05

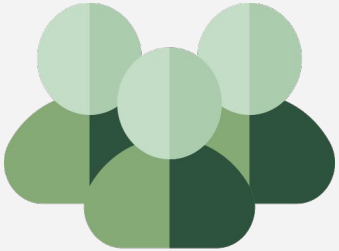
Future Insights

Future Insights



Weather Patterns

Road Conditions



Driver Demographics

THANK YOU!

Questions?

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