My title*

My subtitle if needed

Cristina Burca

September 24, 2024

Abstract

First sentence. Second sentence. Third sentence. Fourth sentence.

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1 Introduction

Toronto is infamous for its heavy traffic, having one of the busiest highways in North America. With high amounts of traffic, also comes a lot of accidents. This paper was written with the purpose of compiling information of hotspot automobile accidents in the Toronto Region, to locate high traffic and high accident areas. Furthermore, this information assists in identifying the reasons for these accidents, whether it be distracted driving, or infrastructure related.

2 2. Data

The data is sourced from the City of Toronto Open Data, a portal containing Licensed official data of Toronto. Used R to compile this paper as well as packages….

3 2.1 Introduction to the Data

This Data consists of 18,763 observations of automobile accidents in the Region of Toronto from 2006 to September 2024. It consists of 6 variables of interest, including `Date`, `Time`, `Street 1`, `Street 2`, where the intersection (or nearest intersection) was to the accident, `Injury` identifying if injuries occurred and their severity, `geometry` containing the latitude and longitude of the accident. This data was cleaned to have

*Code and data are available at: LINK.

the term 'automobile' accidents include any accidents involving cars, trucks, motorcycles, transit vehicles or emergency vehicles. Accidents where pedestrians or cyclists are involved are also included.

In Figure 1, the map shows clusters of accidents across the city of Toronto. Darker circles show a denser area of accidents, and lighter circles show less dense areas of accidents. Many accidents occur Downtown Toronto, located at the bottom center of the map, as well as on the far right of the map near the intersections of the highways 427, 401 adn 409, on the right side of the map surrounding Scarborough, and finally along Steeles Ave, which is the uppermost highlighted street on the map.

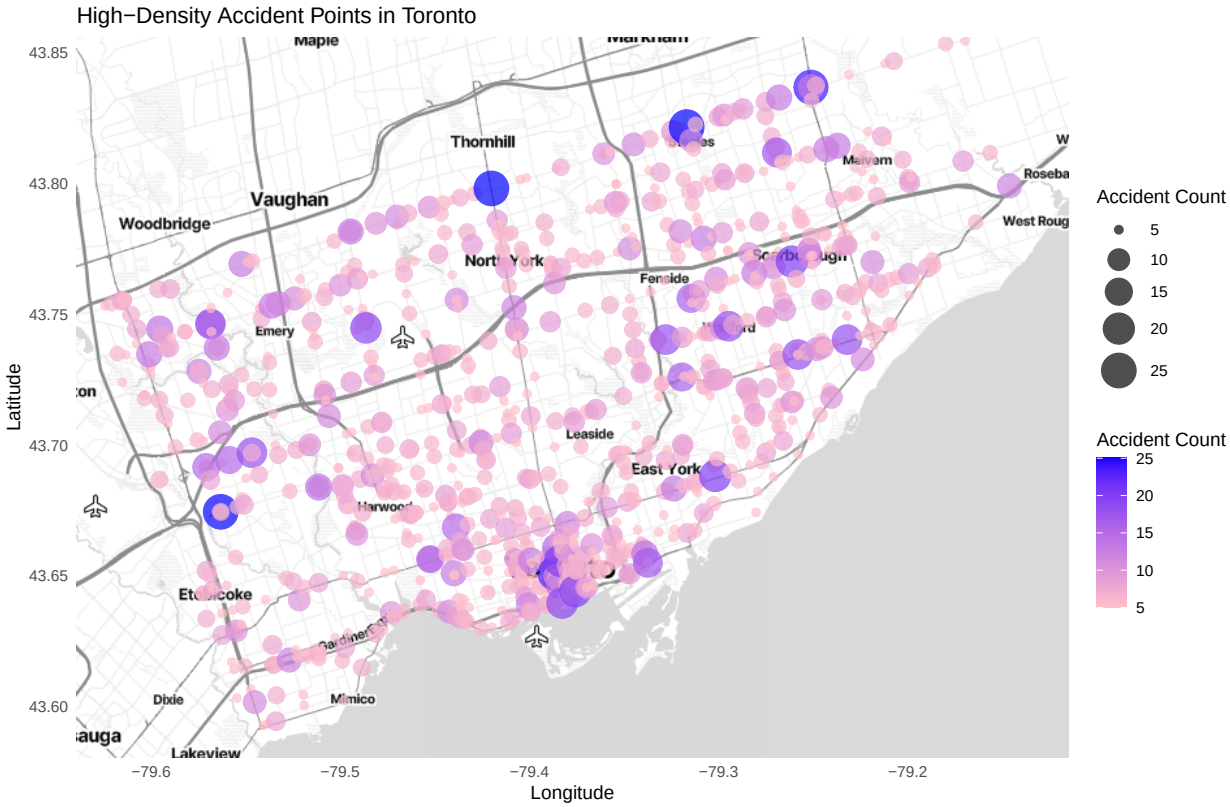


Figure 1: somethinf

In Figure 2, the top 10 neighborhoods with the most accidents have been displayed to compare the number as well as the severity of the accidents. These numbers correlate to the following nieghbourhoods:

1- West Humber- Clairville, Etobicoke 119- Wexford/Maryvale Scarborough 20- Alderwood, Etboicoke,

Alderwood 30- Brookhaven- Amesbury, North York 166- 70- South Riverdale, Old City of Toronto 170- Yonge- Bay Corridor, Old City of Toronto, Bay Street, Financial District 73- Moss Park- Old City of Toronto, Moss Park, Corktown and Garden District 78- Kensington- Chinatown, Old City of Toronto, Alexandra Park, Chinatown, Grange Park, Kensington Market 85- South Parkdale- Old City of Toronto, Parkdale, South Parkdale

Noticeably, neighbourhood 1 has the most accidents occurred, by almost 200 accidents.

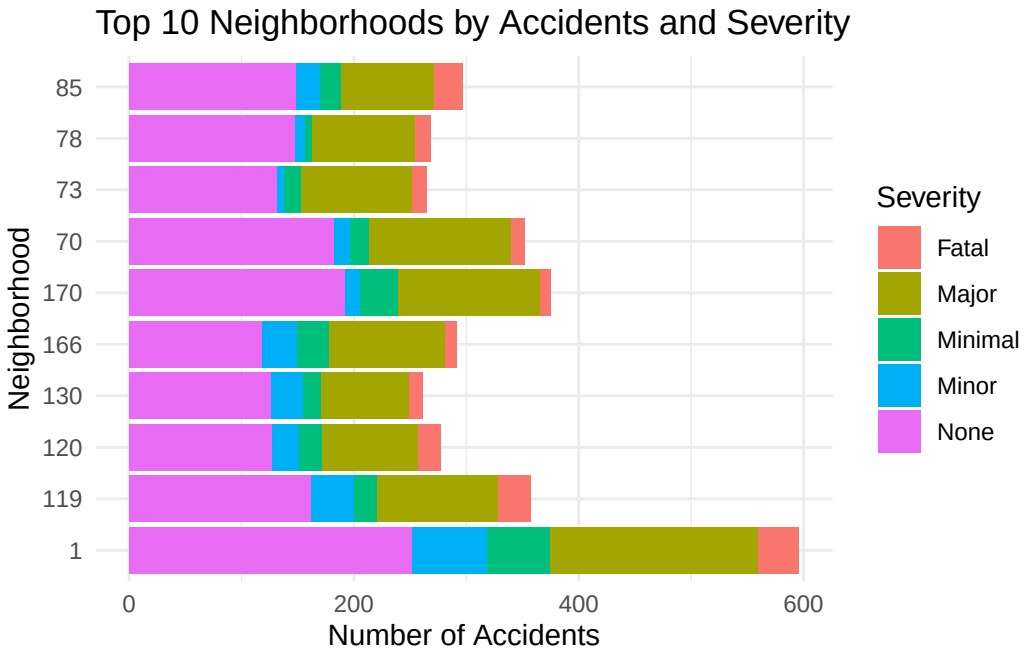
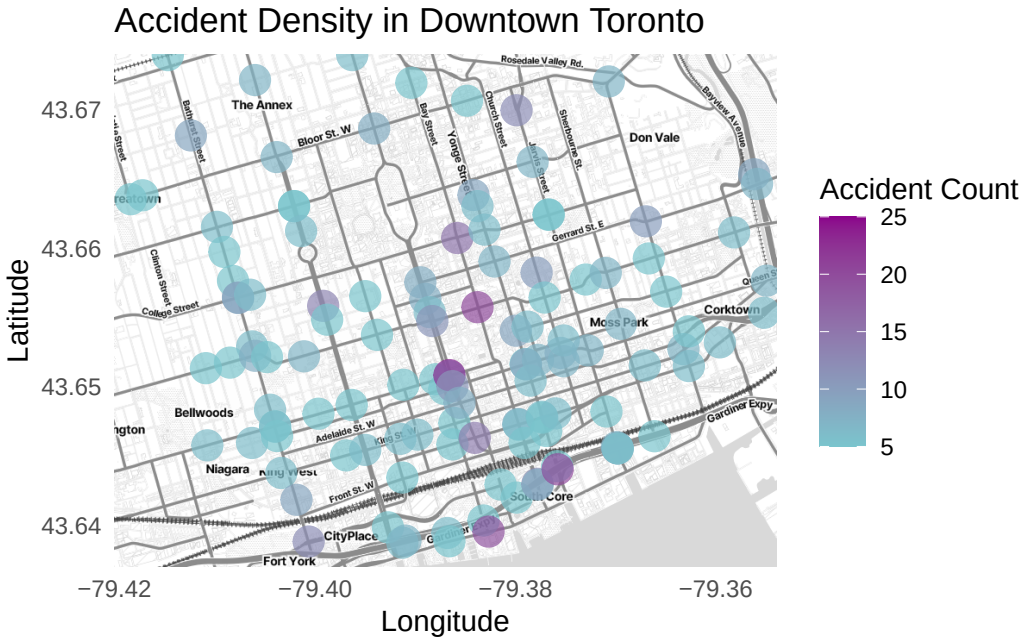
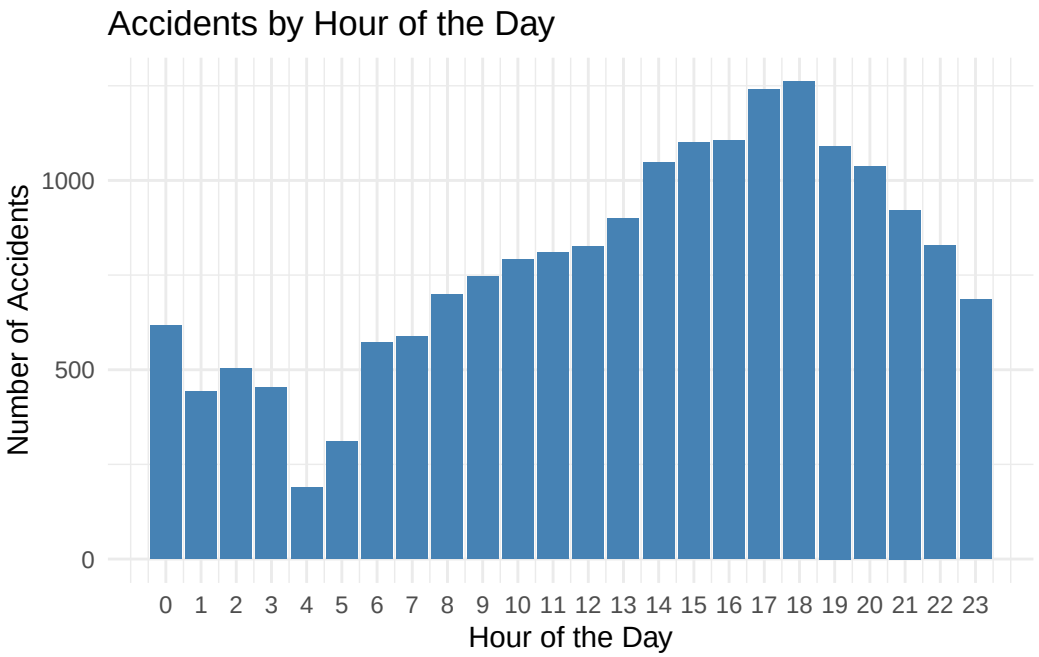


Figure 2: somethinf





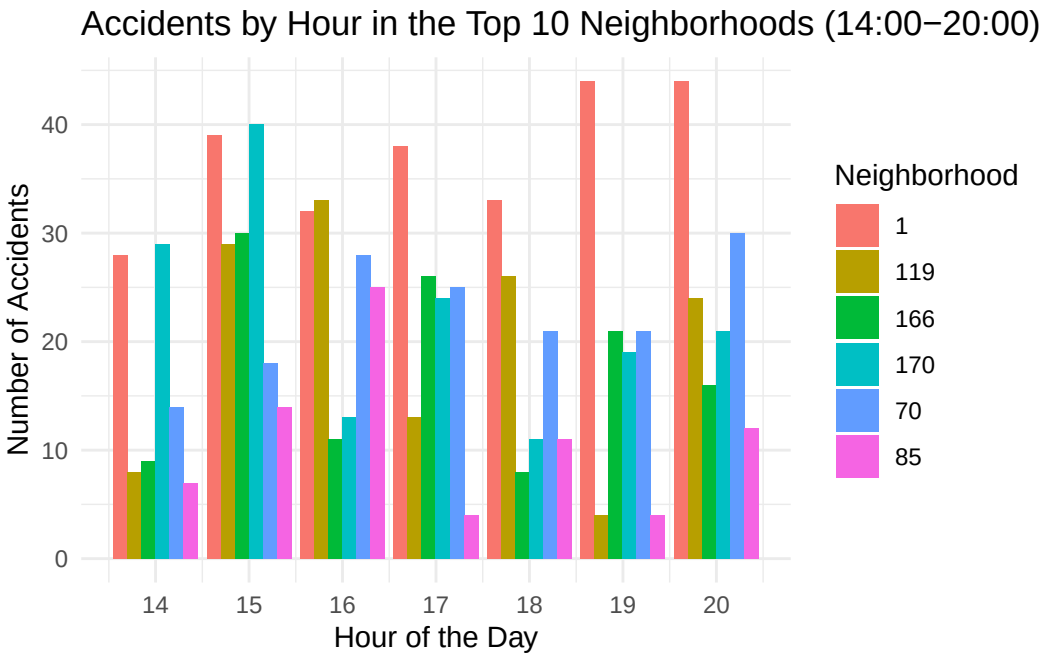


Table 1: Tally of Driver Scenarios in Accidents

Driver Scenario	Count
Failed to Yield Right of Way	1596
Lost control	999
Improper Turn	613
Disobeyed Traffic Control	497
Exceeding Speed Limit	264
Following too Close	252
Speed too Fast For Condition	214

Driver Scenario	Count
Improper Lane Change	125
Improper Passing	121
Wrong Way on One Way Road	8
Speed too Slow	4

Table 2: Tally of Pedestrian Scenarios in Accidents

Pedestrian Scenario	Count
Crossing, no Traffic Control	719
Crossing without right of way	445
Running onto Roadway	233
Crossing, Pedestrian Crossover	66
Coming From Behind Parked Vehicle	37
Person Getting on/off Vehicle	36
Walking on Roadway with Traffic	33
Playing or Working on Highway	24
Walking on Roadway Against Traffic	24
Crossing marked crosswalk without ROW	20
Pushing/Working on Vehicle	13
Person Getting on/off School Bus	1

Table 3: Tally of Cyclist Scenarios in Accidents

Cyclist Scenario	Count
Disobeyed Traffic Control	79
Failed to Yield Right of Way	61
Lost control	28
Improper Turn	26
Improper Lane Change	22
Improper Passing	20
Speed too Fast For Condition	8
Wrong Way on One Way Road	5
Following too Close	4