



Dorchester Crime

Rich Huebner

Outline

- ❖ Problem Background
- ❖ Data Set
- ❖ Methods
- ❖ Results
- ❖ Discussion
- ❖ Conclusion

Introduction

- ❖ Dorchester, Massachusetts is a large suburb located just south of Boston. It is one of Boston's largest and most diverse neighborhoods. The famous Dorchester Avenue (or "Dot Ave" as locals call it) is one of the main roads that winds its way through the neighborhood.
- ❖ This neighborhood has a lot of crime. This project and analysis will explore the different types of crime and where they occur across Dorchester, and then conduct a clustering analysis for the various areas within Dorchester (such as near Meeting House Hill, Bowdoin, or Fields Corner West).
- ❖ The FourSquare API will also be used to examine venues and determine whether some of these crimes have occurred close by certain types of venues.
- ❖ Citizens who plan on moving into this neighborhood should be more informed -- and understand the different types of crime that occur in the different parts of Dorchester. The analysis may also be helpful for City Managers in Dorchester and surrounding communities. It is my hope to contribute to these types of analysis in the Boston region.

Overarching Questions

- ❖ What are the crimes that occurred in Dorchester, as viewed on a map?
- ❖ What is the proximity of violent crimes, such as murders and shootings, to various venues across Dorchester?
- ❖ Are there clusters of murders and shootings located in certain parts of Dorchester?

Dataset

- ❖ The Universal Hub Web site contains various data for crime in Dorchester. This specific data set contains variables:
- ❖ * Date of occurrence, Description of crime, Type of crime, Street where it occurred
- ❖ The dataset can be found here:
<https://www.universalhub.com/crime/dorchester.html>
- ❖ Data covers crime in Dorchester from 2018 through October 2020.

Method

- ❖ Download dataset to .csv file.
- ❖ Geocode the addresses for the crimes, getting latitude and longitude.
- ❖ Plot crimes on a map, focus in on only the top types of crimes (murder and shooting)
- ❖ Use the FourSquare API to grab venue data near the crimes, and plot those on the same map as above.
- ❖ Cluster the crimes to determine any patterns.

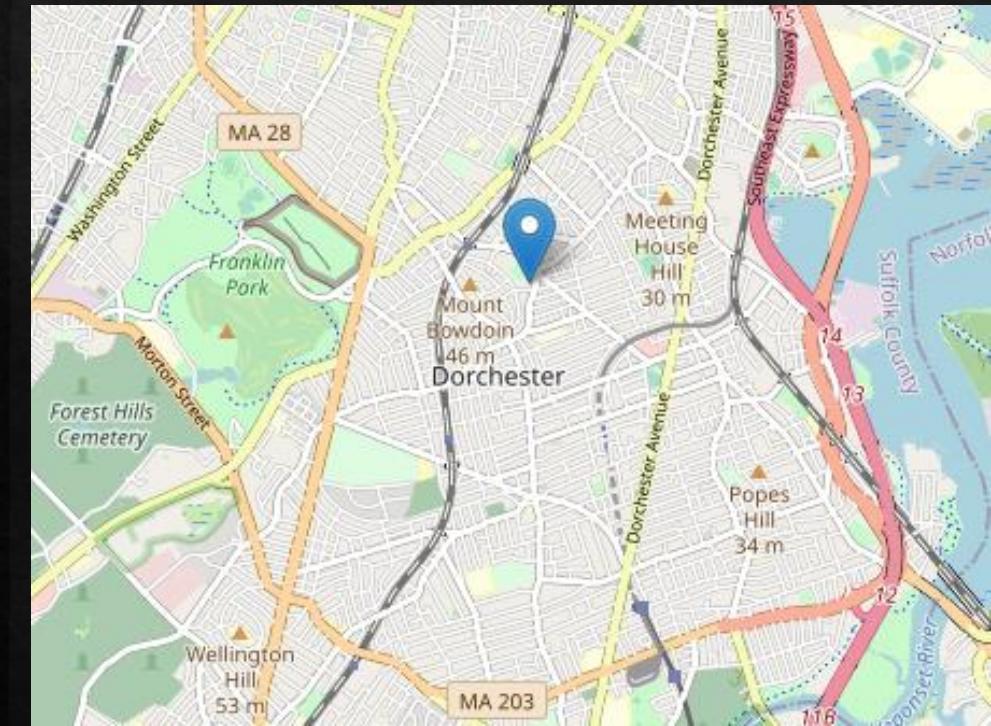
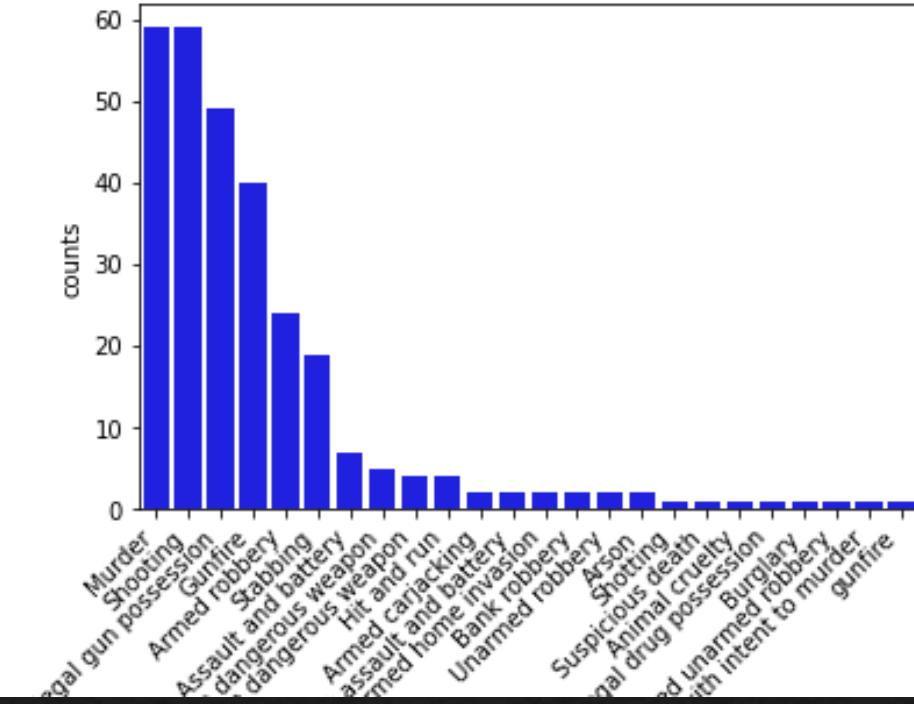
Results

❖ Types of Crime (Top 5)

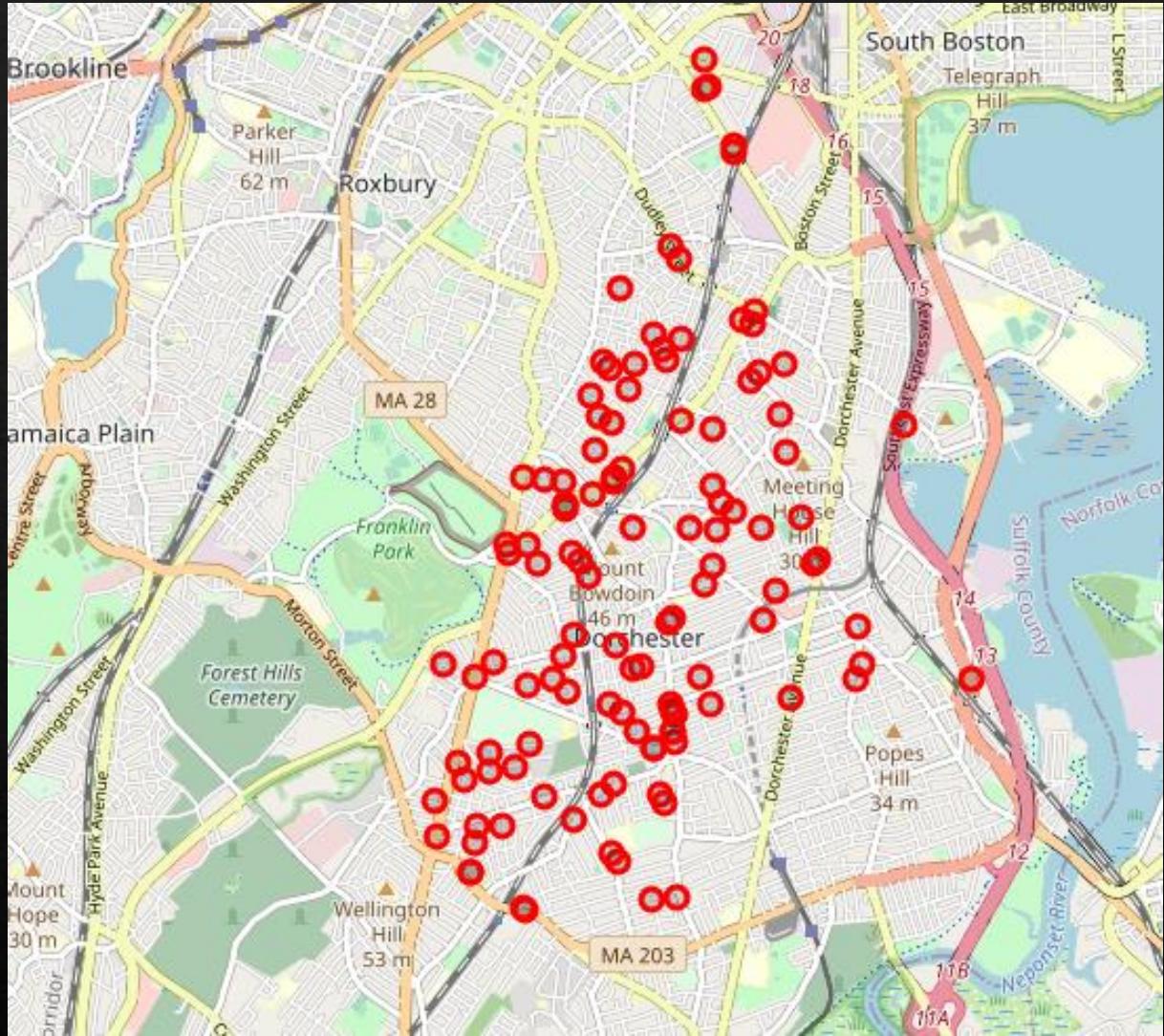
- ❖ Murder (n = 59)
- ❖ Shooting (n = 59)
- ❖ Illegal gun possession (n = 49)
- ❖ Gunfire (n = 40)
- ❖ Armed robbery (n = 24)

Type	counts
17	Murder 59
18	Shooting 59
15	Illegal gun possession 49
12	Gunfire 40
3	Armed robbery 24

- ❖ Here is a plot of the counts of each type of crime. We can see murder and shootings are quite high compared to some of the others.

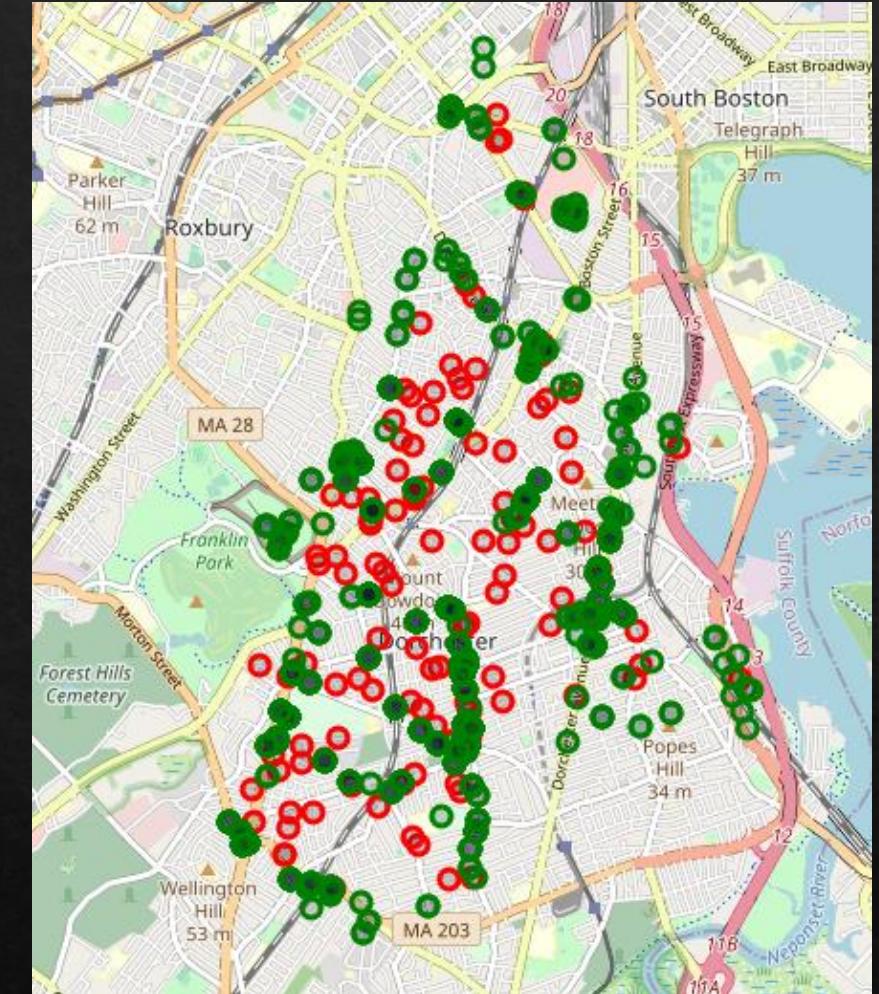


- ❖ I plotted ONLY the murders and shootings.
- ❖ Otherwise, our map would become far too “busy”.
- ❖ These crimes are pinned in RED.



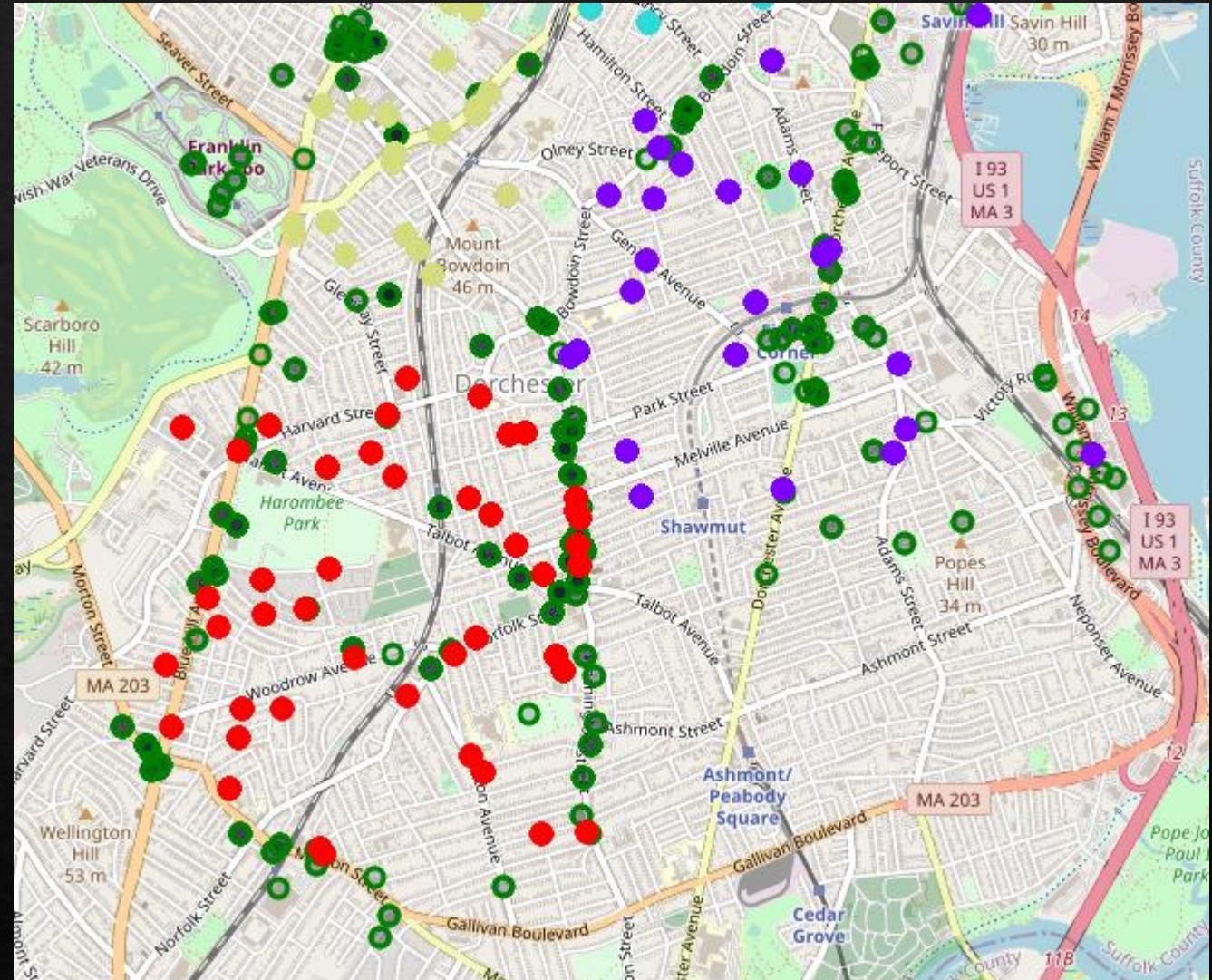
FourSquare API

- ❖ Next, I overlaid the venue data from the FourSquare API onto the same map, yielding this result.
- ❖ Venues are in Green pins.



Cluster Analysis

- ❖ I selected four clusters.
- ❖ Interestingly, there was a significant cluster in the southwest part of Dorchester, mostly centered near Washington St. and to the nest of Washington



Too Close for Comfort

- ❖ An examination of crimes that occurred at or around the venues that we captured.

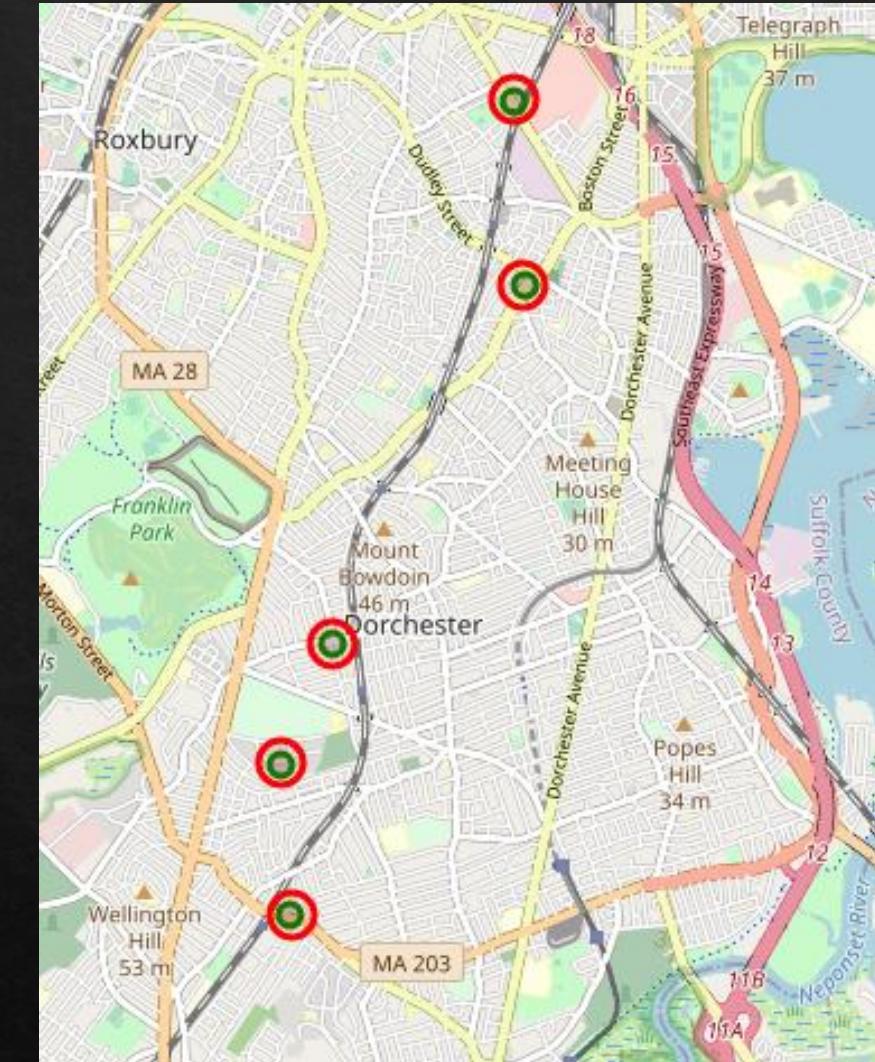
Cluster		Address	Address Latitude	Address Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category	Distance
75	2	1024 Massachusetts Ave.	42.327016	-71.066816	Victoria's Diner	42.326974	-71.066808	Diner	4
302	0	144 Harvard St.	42.296203	-71.080767	Harvard and Bernard	42.296173	-71.080734	Liquor Store	4
396	0	77 Ames St.	42.289466	-71.084623	Enterprise CarShare	42.289429	-71.084557	Rental Car Location	6
335	2	566 Columbia Rd.	42.316594	-71.066143	Upham's House of Pizza	42.316536	-71.065977	Pizza Place	15
392	0	900 Morton St.	42.280838	-71.083767	Morton Seafood And pizza	42.280885	-71.083953	American Restaurant	16

There are 5 places where the analysis shows that the murder/shooting occurred at one of the venues reported by the FourSquare API. These include:

- Victoria's Diner on Mass Ave.
- Harvard & Bernard on Harvard St.
- Enterprise CarShare on Ames St.
- Upham's House of Pizza on Columbia Rd.
- Morton Seafood and Pizza on Morton St.

Hot spots for murder and shootings

Venue	Venue Latitude	Venue Longitude
Victoria's Diner	42.326974	-71.066808
Harvard and Bernard	42.296173	-71.080734
Enterprise CarShare	42.289429	-71.084557
Upham's House of Pizza	42.316536	-71.065977
Morton Seafood And pizza	42.280885	-71.083953



Lessons Learned

- ❖ Examining the venues that so many people visit in Dorchester, and how the crime events overlap these venues is an interesting analysis.
- ❖ Seemingly innocent venues like pizza places were a bit alarming to learn that there were crimes committed there.
- ❖ I've had the opportunity to visit Victoria's Diner on multiple occasions. I'm glad it wasn't the night of the murder there.
- ❖ Would I change my behavior?
 - ❖ I would still provide patronage to these venues. In broad daylight with a lot of people around it is less risky.
- ❖ A few crimes occurred near a Smelly Camel at Franklin Park Zoo.

- ❖ A few crimes occurring near the Smelly Camel.

