



Capstone Project - The Battle of Neighborhoods

IBM APPLIED DATASCIENCE COURSE



INTRODUCTION

The city of Toronto supports one of the large urban settings in the world. With the likes of Financial District - Toronto Stock Exchange (3rd largest in North America), Canadian Film & TV Industry, The Digital Corridor and more, the need for coffee is boundless around the city. We will look to explore which neighborhoods in Toronto are closest to coffee shops to residents. This can influence the decision to stay/rent/buy housing in those neighborhoods for coffee lovers.

PROBLEM STATEMENT

1. Find neighborhoods cluster(s) with the most coffee shops near them
2. Identify a few desirable neighborhoods to stay that have access to most coffee shops
3. Find the neighborhoods cluster with the lowest coffee shops near them
4. This presents a business opportunity for entrepreneurs to invest in or open new coffee shops near those neighborhoods.





DATA SOURCING

Source Toronto neighborhood data from Wikipedia

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

Get geolocation data from cocl.us (used in previous labs)

http://cocl.us/Geospatial_data

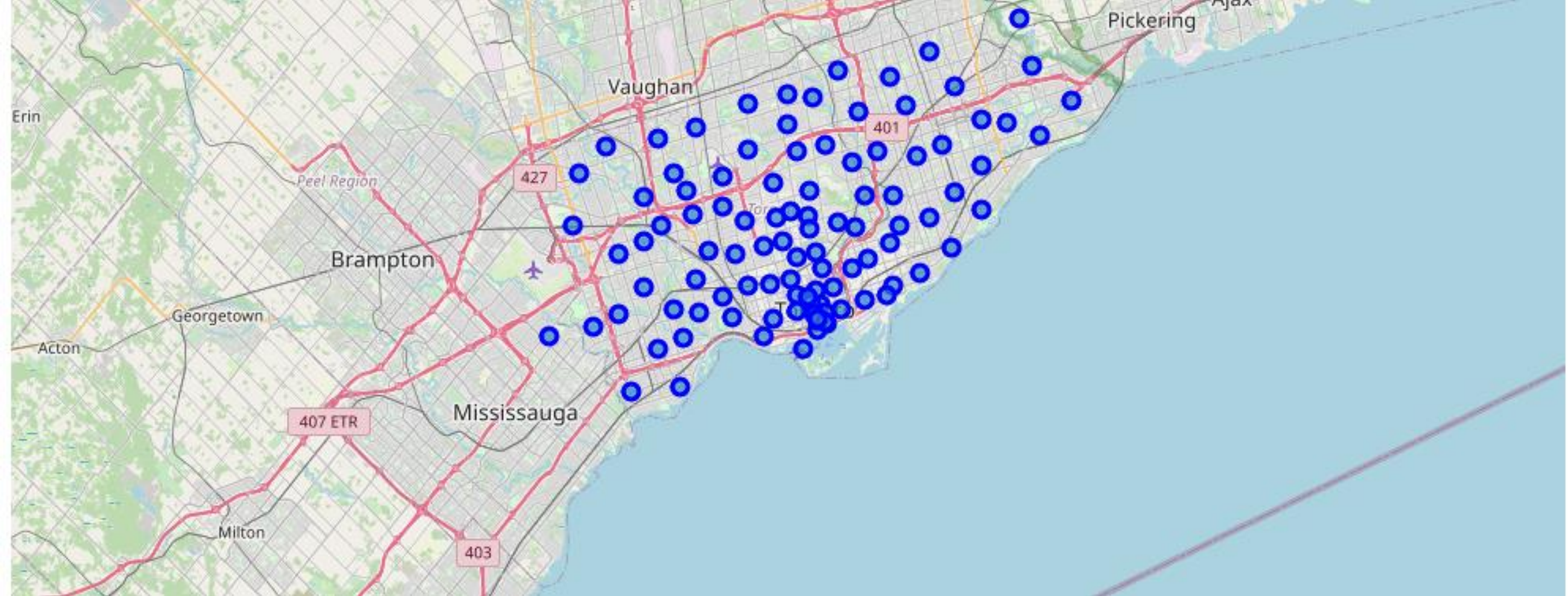
Using FourSquare API, get the venues data for the neighborhood latitude/longitudes

https://api.foursquare.com/v2/venues/explore?&client_id={} &client_secret={} &v={} &ll={},{} &radius={} &limit={ }

DATA PREP

1. Clean up empty data
2. Clean up NaN data
3. Update missing neighborhood data
4. Format neighborhood data
5. Merge location data with neighborhoods





TORONTO NEIGHBORHOODS

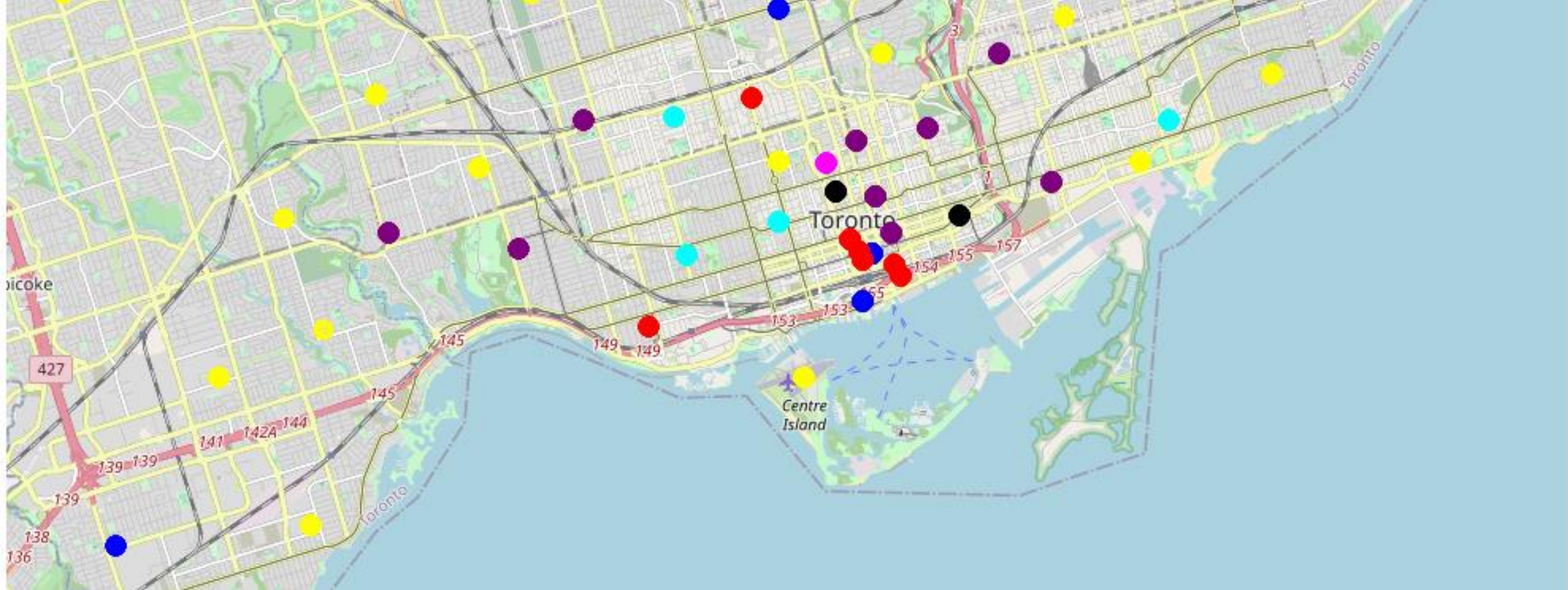
	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Malvern, Rouge	43.806686	-79.194353	Wendy's	43.807448	-79.199056	Fast Food Restaurant
1	Rouge Hill, Port Union, Highland Creek	43.784535	-79.160497	Royal Canadian Legion	43.782533	-79.163085	Bar
2	Guildwood, Morningside, West Hill	43.763573	-79.188711	RBC Royal Bank	43.766790	-79.191151	Bank
3	Guildwood, Morningside, West Hill	43.763573	-79.188711	G & G Electronics	43.765309	-79.191537	Electronics Store
4	Guildwood, Morningside, West Hill	43.763573	-79.188711	Big Bite Burrito	43.766299	-79.190720	Mexican Restaurant

	Neighborhood	Coffee Shop
0	Agincourt	0.000000
1	Alderwood, Long Branch	0.125000
2	Bathurst Manor, Wilson Heights, Downsview North	0.100000
3	Bayview Village	0.000000
4	Bedford Park, Lawrence Manor East	0.086957

VENUES

2130 venues found

95 Coffee Shops



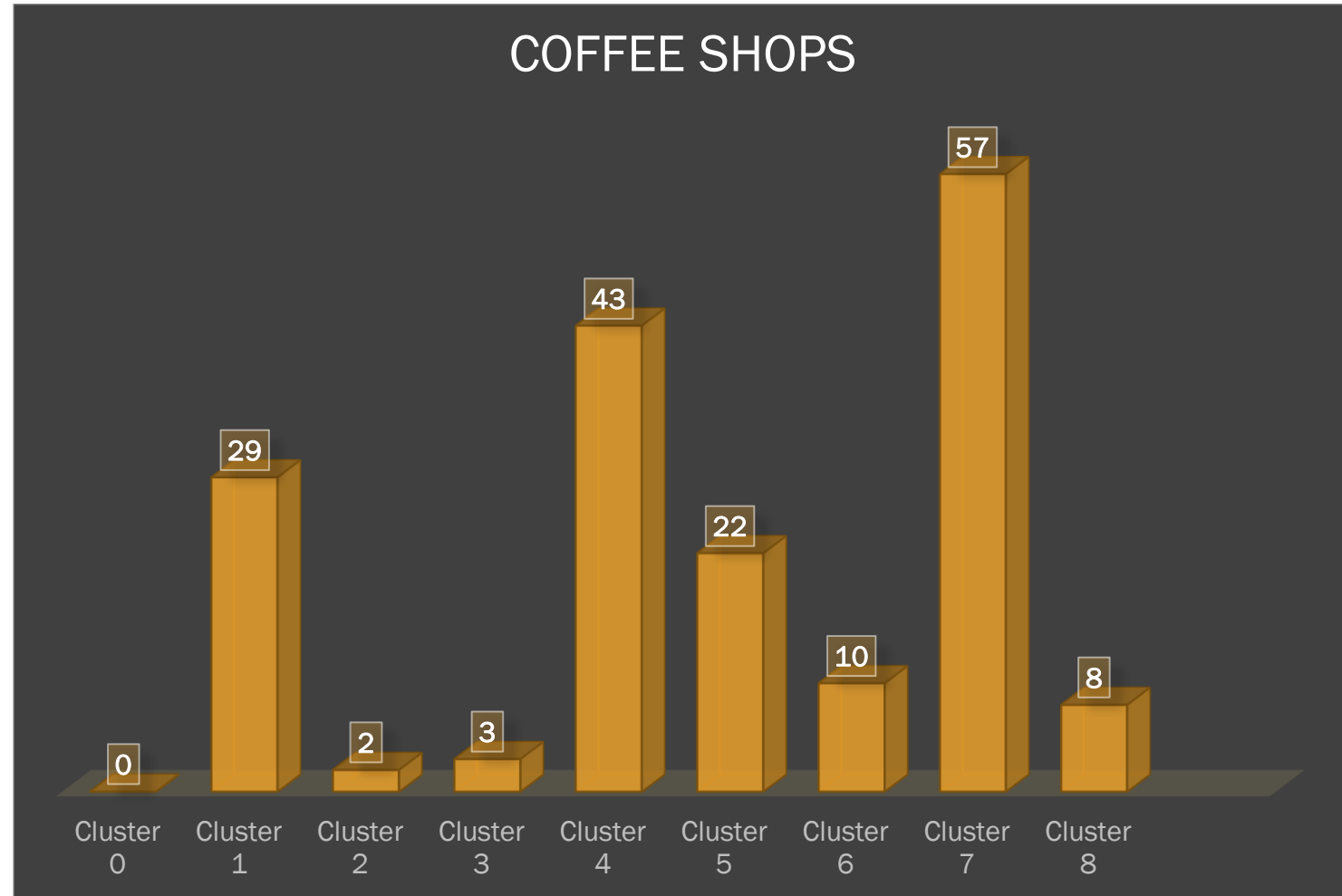
K CLUSTERS

9 Clusters

One Cluster with “No” Coffee Shops

ANALYSIS

1. Cluster 7 has the maximum coffee shops
2. Cluster 4 has the next most coffee shops
3. Cluster 0 has no coffee shops



1. Cluster 7 Neighborhoods has the maximum coffee shops to live around, in Neighborhoods like **Berczy Park, First Canadian Place, Underground city and Richmond**, Adelaide, King.

2. Cluster 4 Neighborhood has the second most coffee shops to live around, in Neighborhoods like **Church and Wellesley, Garden District**, Ryerson & **St. James Town**.

3. Cluster 0 can do with some coffee shops, around Neighborhoods like **Agincourt & Bayview Village**.

CONCLUSION