

Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods (Week 2) – Presentation

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This presentation is about how I used various sources of data to come to my opinion that is the best possible answer to the question presented – Where is the best location to start another Chinese Restaurant in Toronto City that is not in Chinatown?

Brief Introduction on Toronto.

Toronto is the [provincial capital](#) of [Ontario](#) and the [most populous city in Canada](#), with a population of 2,731,571 in 2016. Current to 2016, the Toronto [census metropolitan area](#) (CMA), of which the majority is within the [Greater Toronto Area](#) (GTA), held a population of 5,928,040, making it Canada's [most populous CMA](#). The city is the anchor of the [Golden Horseshoe](#), an urban agglomeration of 9,245,438 people (as of 2016) surrounding the western end of [Lake Ontario](#).^[13] Toronto is an international centre of business, finance, arts, and culture, and is recognized as one of the most [multicultural](#) and [cosmopolitan](#) cities in the world.^{[14][15][16]}

The diverse population of Toronto reflects its current and historical role as an important destination for [immigrants to Canada](#).^{[22][23]} More than 50 percent of residents belong to a [visible minority](#) population group,^[24] and over 200 distinct [ethnic origins](#) are represented among its inhabitants.^[25] While the majority of Torontonians speak [English](#) as their primary language, over 160 languages are spoken in the city.^[26]

Toronto is a prominent centre for music,^[27] theatre,^[28] motion picture production,^[29] and television production,^[30] and is home to the headquarters of Canada's major national [broadcast networks](#) and [media](#) outlets.^[31] Its varied [cultural institutions](#),^[32] which include numerous [museums and galleries](#), [festivals and public events](#), entertainment districts, [national historic sites](#), and [sports activities](#),^[33] attract over 25 million [tourists](#) each year.^{[34][35]} Toronto is known for its many [skyscrapers and high-rise buildings](#),^[36] in particular the tallest free-standing structure in the [Western Hemisphere](#), the [CN Tower](#).^[37]

The city is home to the [Toronto Stock Exchange](#), the headquarters of Canada's [five largest banks](#),^[38] and the headquarters of many large Canadian and multinational corporations.^[39] Its [economy](#) is highly diversified with strengths in technology, design, financial services, life sciences, education, arts, fashion, business services, environmental innovation, food services, and tourism.^{[40][41][42]}

I start off with finding what boroughs characteristics of the city are, and then deduce if they are a draw card for tourists and locals alike.

Steps taken:

I first created a table which I could use to group the boroughs into clusters and then study each one. (see table 1)

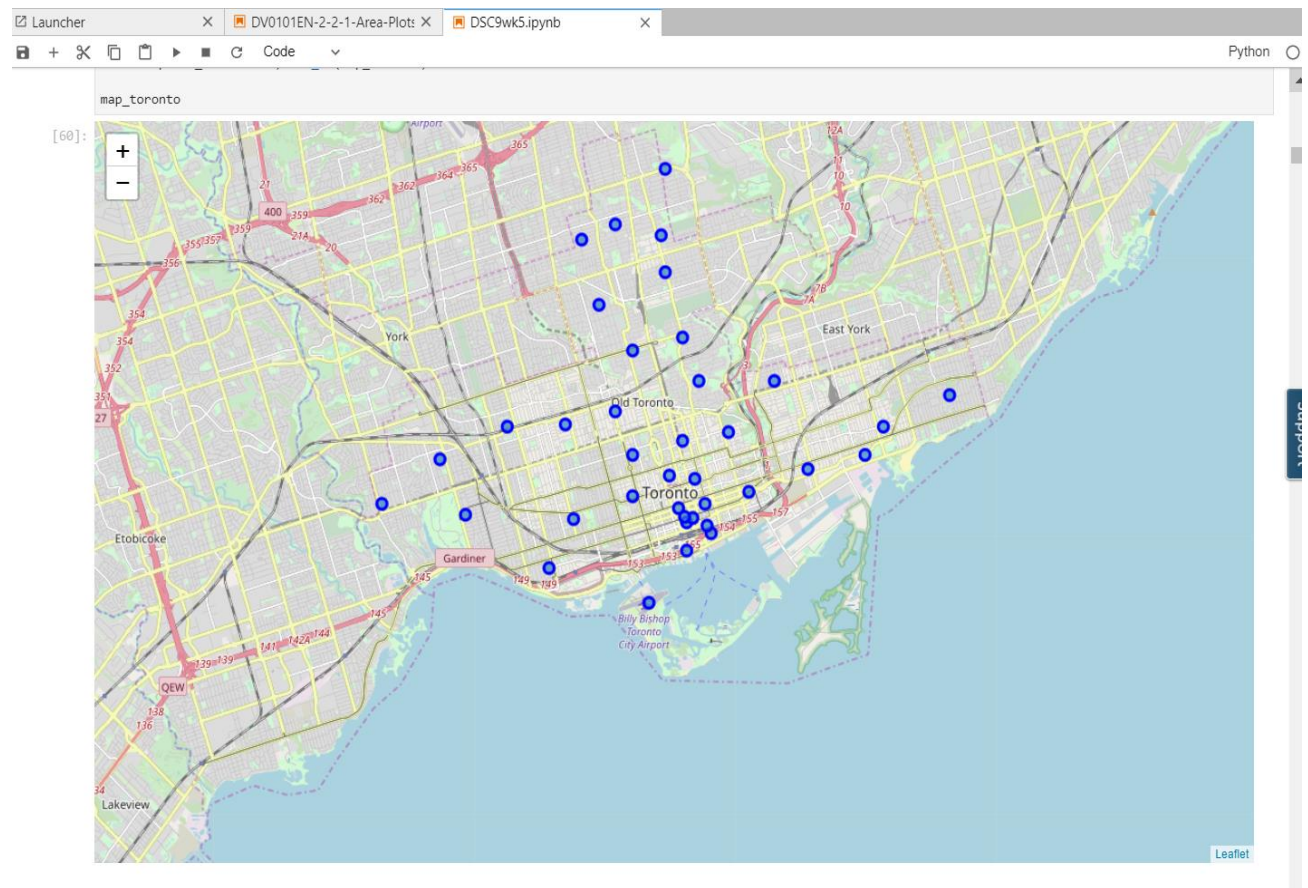
In order to cluster them, I first need to gather more information on each one of them, so that segmentation is possible. Information is gathered using API calls to Foursquare for each of the borough possessed.

Once all the data for the boroughs are gathered then Machine Learning algorithm “K-means” is deployed to segment the boroughs

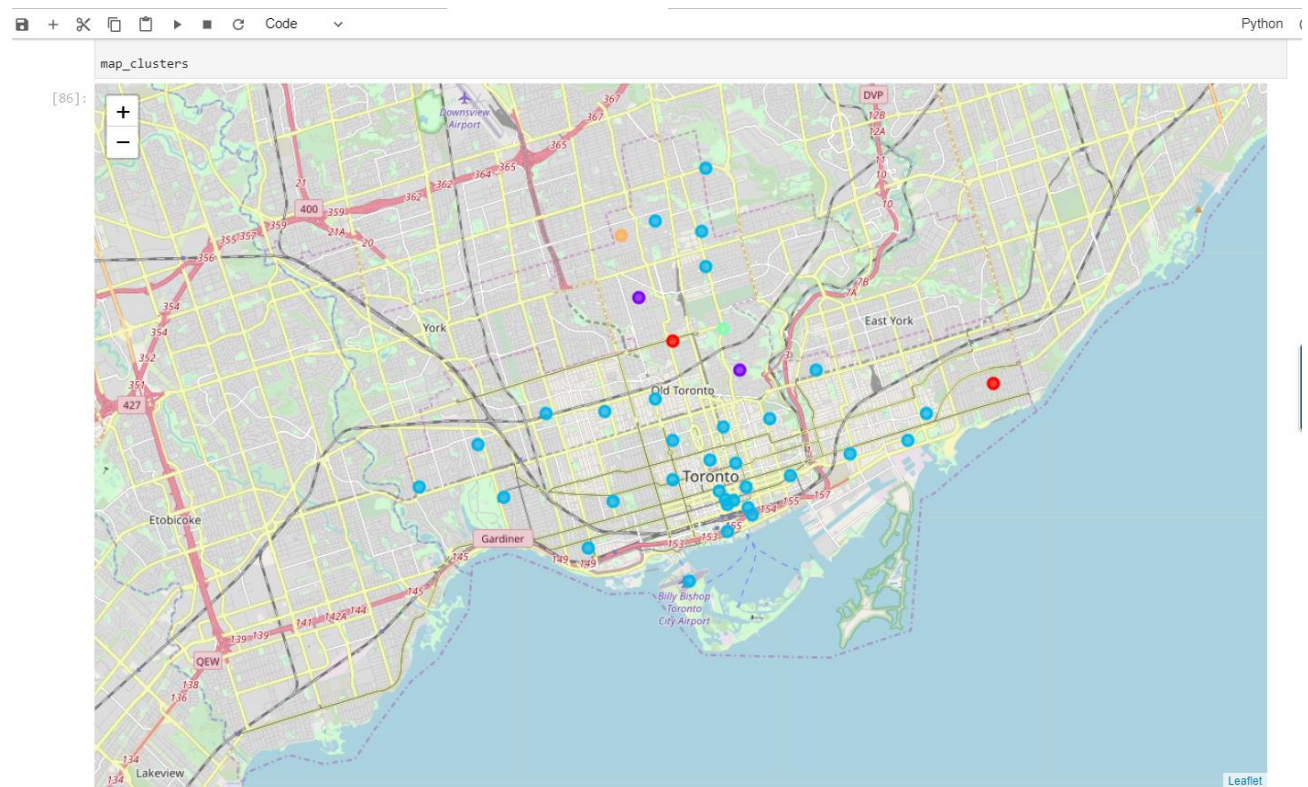
Table 1.

	Postcode	Borough	Neighbourhood	Latitude	Longitude
2	M5A	Downtown Toronto	Harbourfront, Regent Park	43.654260	-79.360636
9	M5B	Downtown Toronto	Ryerson, Garden District	43.657162	-79.378937
15	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418
19	M4E	East Toronto	The Beaches	43.676357	-79.293031
20	M5E	Downtown Toronto	Berczy Park	43.644771	-79.373306
24	M5G	Downtown Toronto	Central Bay Street	43.657952	-79.387383
25	M6G	Downtown Toronto	Christie	43.669542	-79.422564
30	M5H	Downtown Toronto	Adelaide, King, Richmond	43.650571	-79.384568
31	M6H	West Toronto	Dovercourt Village, Dufferin	43.669005	-79.442259
36	M5J	Downtown Toronto	Harbourfront East, Toronto Islands, Union Station	43.640816	-79.381752
37	M6J	West Toronto	Little Portugal, Trinity	43.647927	-79.419750
41	M4K	East Toronto	The Danforth West, Riverdale	43.679557	-79.352188
42	M5K	Downtown Toronto	Design Exchange, Toronto Dominion Centre	43.647177	-79.381576
43	M6K	West Toronto	Brockton, Exhibition Place, Parkdale Village	43.636847	-79.428191
47	M4L	East Toronto	The Beaches West, India Bazaar	43.668999	-79.315572
48	M5L	Downtown Toronto	Commerce Court, Victoria Hotel	43.648198	-79.379817
54	M4M	East Toronto	Studio District	43.659526	-79.340923
61	M4N	Central Toronto	Lawrence Park	43.728020	-79.388790
62	M5N	Central Toronto	Roselawn	43.711695	-79.416936
67	M4P	Central Toronto	Davisville North	43.712751	-79.390197
68	M5P	Central Toronto	Forest Hill North, Forest Hill West	43.696948	-79.411307
69	M6P	West Toronto	High Park, The Junction South	43.661608	-79.464763
73	M4R	Central Toronto	North Toronto West	43.715383	-79.405678
74	M5R	Central Toronto	The Annex, North Midtown, Yorkville	43.672710	-79.405678
75	M6R	West Toronto	Parkdale, Roncesvalles	43.648960	-79.456325
79	M4S	Central Toronto	Davisville	43.704324	-79.388790
80	M5S	Downtown Toronto	Harbord, University of Toronto	43.662696	-79.400049
81	M6S	West Toronto	Runnymede, Swansea	43.651571	-79.484450
83	M4T	Central Toronto	Moore Park, Summerhill East	43.689574	-79.383160
84	M5T	Downtown Toronto	Chinatown, Grange Park, Kensington Market	43.653206	-79.400049
86	M4V	Central Toronto	Deer Park, Forest Hill SE, Rathnelly, South Hi...	43.686412	-79.400049
87	M5V	Downtown Toronto	CN Tower, Bathurst Quay, Island airport, Harbo...	43.628947	-79.394420
91	M4W	Downtown Toronto	Rosedale	43.679563	-79.377529
92	M5W	Downtown Toronto	Stn A PO Boxes 25 The Esplanade	43.646435	-79.374846
96	M4X	Downtown Toronto	Cabbagetown, St. James Town	43.667967	-79.367675
97	M5X	Downtown Toronto	First Canadian Place, Underground city	43.648429	-79.382280
99	M4Y	Downtown Toronto	Church and Wellesley	43.665860	-79.383160
100	M7Y	East Toronto	Business Reply Mail Processing Centre 969 Eastern	43.662744	-79.321558

Map from Folium before segmentation:



After Segmentation:



5. Examine Clusters

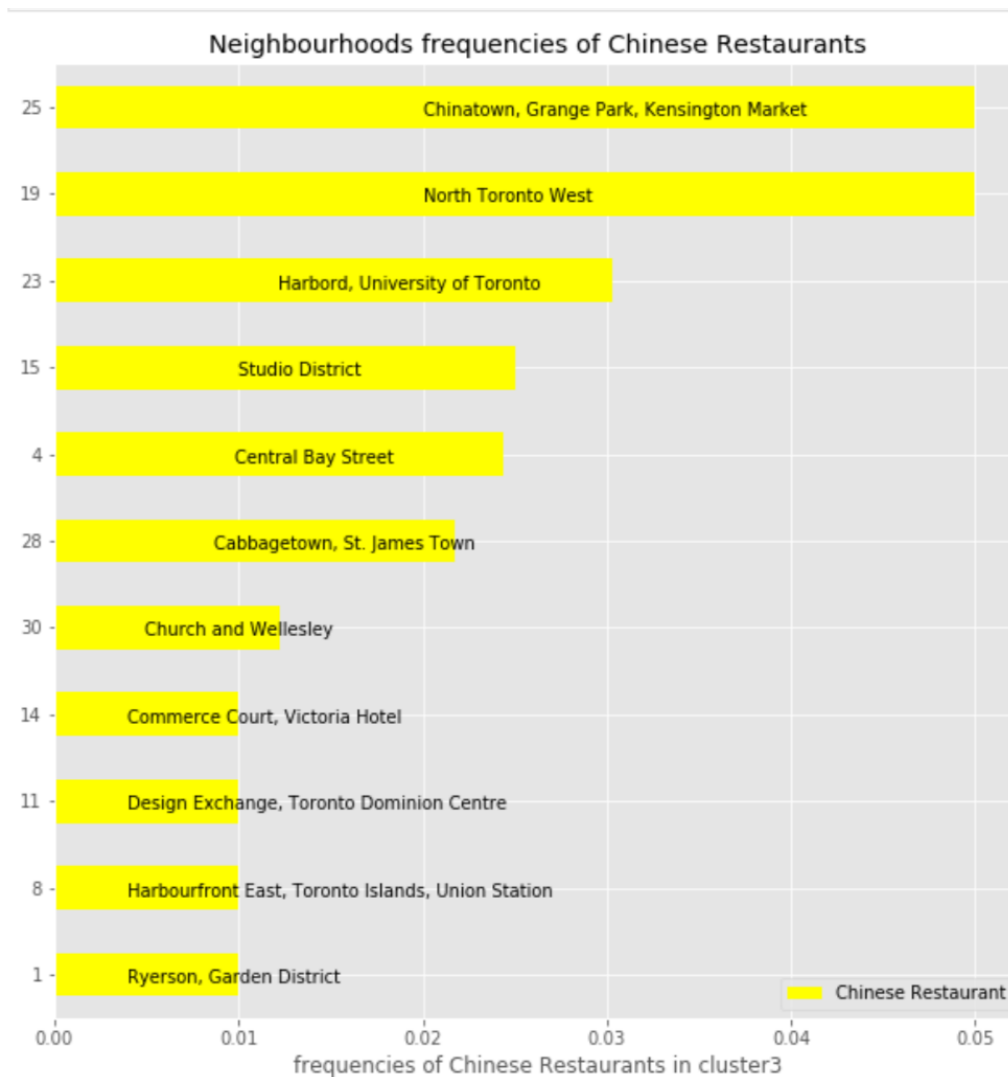
After Studying the 5 clusters, Cluster 3 is deemed most appropriate to narrow down the search further due to its characteristic. Below is a snapshot of the Cluster 3 (labelled2) and its 10 most common venues.

	Neighbourhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
2	Harbourfront, Regent Park	2	Coffee Shop	Café	Park	Pub	Bakery	Restaurant	Breakfast Spot	Mexican Restaurant	Ice Cream Shop	Chocolate Shop
9	Ryerson, Garden District	2	Coffee Shop	Clothing Store	Cosmetics Shop	Fast Food Restaurant	Middle Eastern Restaurant	Café	Japanese Restaurant	Tea Room	Restaurant	Ramen Restaurant
15	St. James Town	2	Coffee Shop	Italian Restaurant	Hotel	Restaurant	Café	Breakfast Spot	Gastropub	Beer Bar	Cosmetics Shop	Cocktail Bar
20	Berczy Park	2	Coffee Shop	Bakery	Cocktail Bar	Farmers Market	Steakhouse	Seafood Restaurant	Café	Cheese Shop	Beer Bar	Park
24	Central Bay Street	2	Coffee Shop	Ice Cream Shop	Italian Restaurant	Café	Burger Joint	Sandwich Place	Salad Place	Indian Restaurant	Bubble Tea Shop	Spa
25	Christie	2	Café	Grocery Store	Park	Restaurant	Convenience Store	Nightclub	Baby Store	Italian Restaurant	Coffee Shop	Athletics & Sports
30	Adelaide, King, Richmond	2	Coffee Shop	Café	Bar	Steakhouse	Thai Restaurant	Gym	Asian Restaurant	Breakfast Spot	Burger Joint	Hotel
31	Dovercourt Village, Dufferin	2	Bakery	Supermarket	Pharmacy	Gym / Fitness Center	Middle Eastern Restaurant	Brewery	Discount Store	Music Venue	Café	Bar
36	Harbourfront East, Toronto Islands, Union Station	2	Coffee Shop	Hotel	Aquarium	Italian Restaurant	Café	Pizza Place	Scenic Lookout	Bakery	Sporting Goods Shop	Brewery
37	Little Portugal, Trinity	2	Bar	Coffee Shop	Asian Restaurant	Men's Store	Café	Restaurant	Bakery	Pizza Place	Cocktail Bar	French Restaurant
41	The Danforth West, Riverdale	2	Greek Restaurant	Coffee Shop	Ice Cream Shop	Italian Restaurant	Furniture / Home Store	Yoga Studio	Bookstore	Brewery	Bubble Tea Shop	Caribbean Restaurant
42	Design Exchange, Toronto Dominion Centre	2	Coffee Shop	Café	Hotel	Restaurant	Italian Restaurant	Gym	Bar	Gastropub	Bakery	American Restaurant
43	Brockton, Exhibition Place, Parkdale Village	2	Breakfast Spot	Café	Coffee Shop	Performing Arts Venue	Intersection	Burrito Place	Stadium	Caribbean Restaurant	Restaurant	Bar
47	The Beaches West, India Bazaar	2	Pizza Place	Italian Restaurant	Pet Store	Gym	Coffee Shop	Pub	Movie Theater	Sandwich Place	Burrito Place	Burger Joint
48	Commerce Court, Victoria Hotel	2	Coffee Shop	Café	Hotel	Restaurant	American Restaurant	Gastropub	Gym	Deli / Bodega	Seafood Restaurant	Steakhouse
54	Studio District	2	Café	Coffee Shop	Gastropub	Italian Restaurant	American Restaurant	Bakery	Yoga Studio	Convenience Store	Seafood Restaurant	Sandwich Place
67	Davisville North	2	Breakfast Spot	Park	Clothing Store	Hotel	Food & Drink Shop	Gym	Sandwich Place	Falafel Restaurant	Farmers Market	Event Space
69	High Park, The Junction South	2	Café	Mexican Restaurant	Bar	Bookstore	Gastropub	Diner	Music Venue	Cajun / Creole Restaurant	Fast Food Restaurant	Flea Market

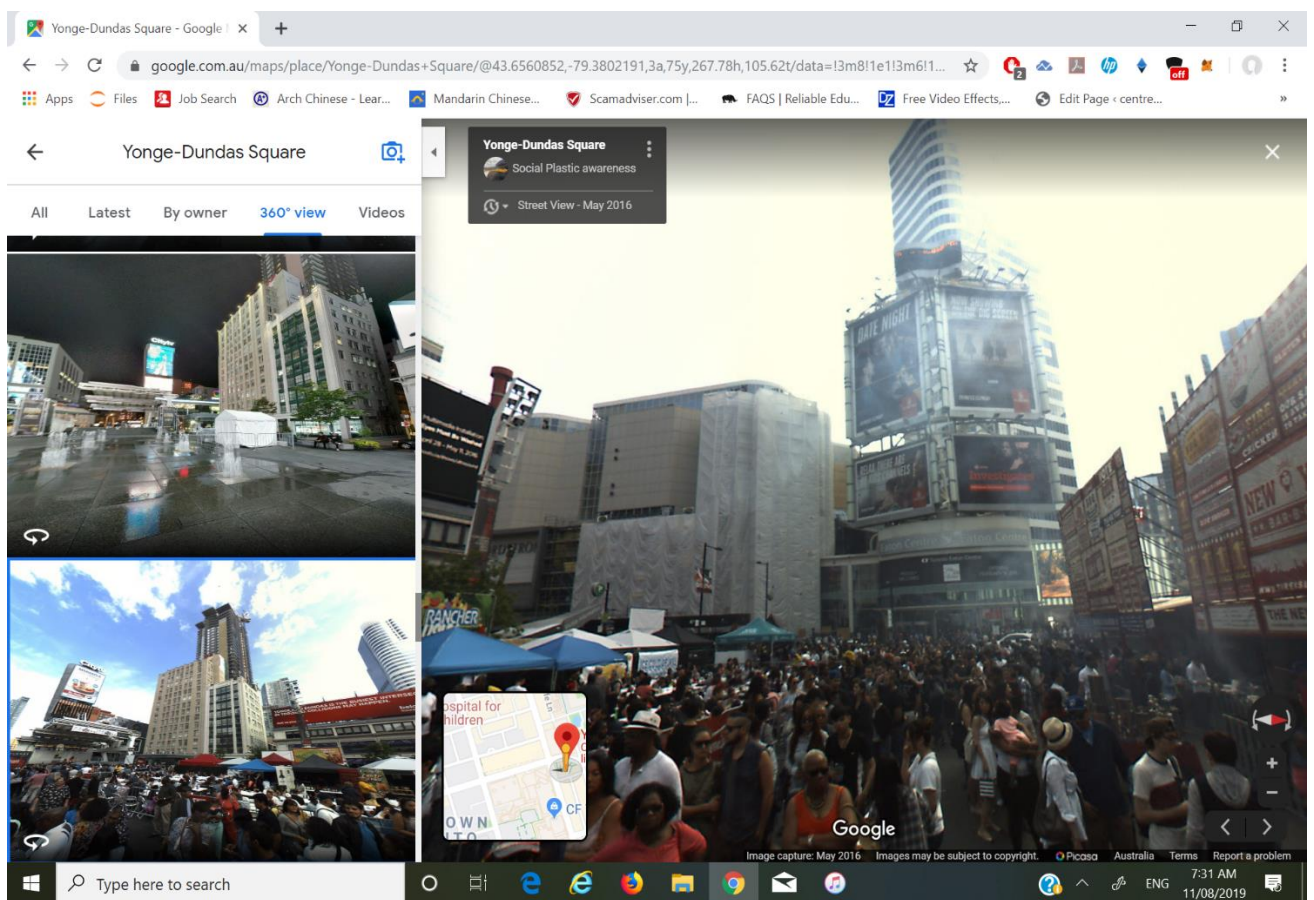
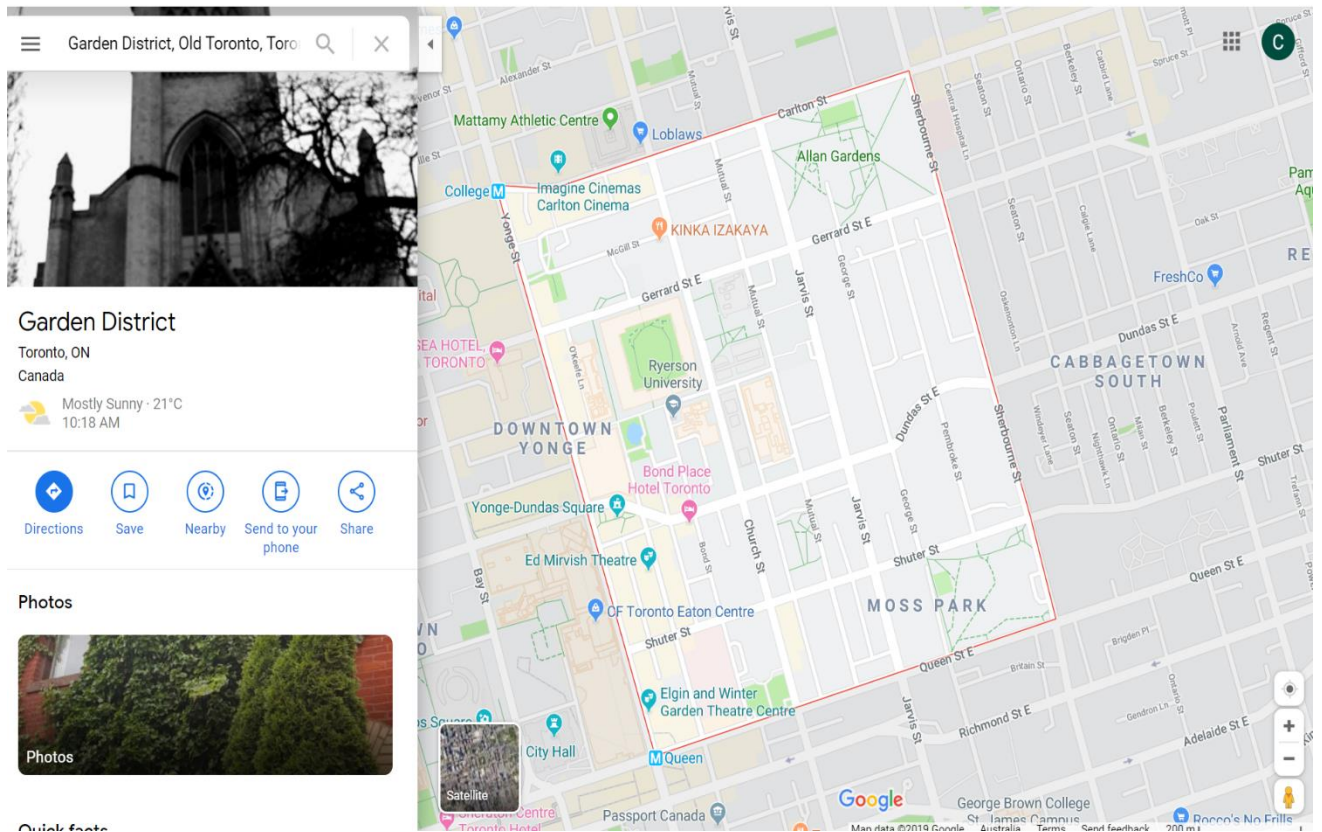
	Neighbourhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
73	North Toronto West	2	Sporting Goods Shop	Coffee Shop	Clothing Store	Yoga Studio	Mexican Restaurant	Diner	Dessert Shop	Park	Chinese Restaurant	Restaurant
74	The Annex, North Midtown, Yorkville	2	Coffee Shop	Sandwich Place	Café	Pizza Place	BBQ Joint	Indian Restaurant	Jewish Restaurant	Flower Shop	Liquor Store	Cosmetics Shop
75	Parkdale, Roncesvalles	2	Breakfast Spot	Gift Shop	Eastern European Restaurant	Movie Theater	Dog Run	Restaurant	Italian Restaurant	Bar	Dessert Shop	Coffee Shop
79	Davisville	2	Dessert Shop	Sandwich Place	Pizza Place	Pharmacy	Coffee Shop	Restaurant	Café	Sushi Restaurant	Italian Restaurant	Indian Restaurant
80	Harbord, University of Toronto	2	Café	Bakery	Japanese Restaurant	Bookstore	Restaurant	Bar	Poutine Place	Beer Bar	Beer Store	Sandwich Place
81	Runnymede, Swansea	2	Coffee Shop	Café	Pizza Place	Sushi Restaurant	Italian Restaurant	Grocery Store	Smoothie Shop	Boutique	Burrito Place	Sandwich Place
84	Chinatown, Grange Park, Kensington Market	2	Vegetarian / Vegan Restaurant	Café	Chinese Restaurant	Coffee Shop	Mexican Restaurant	Vietnamese Restaurant	Dumpling Restaurant	Bar	Bakery	Comfort Food Restaurant
86	Deer Park, Forest Hill SE, Rathnelly, South Hi...	2	Coffee Shop	Pub	Pizza Place	Bagel Shop	Restaurant	Liquor Store	Sports Bar	Supermarket	Sushi Restaurant	Fried Chicken Joint
87	CN Tower, Bathurst Quay, Island airport, Harbo...	2	Airport Service	Airport Lounge	Airport Terminal	Coffee Shop	Airport	Airport Food Court	Airport Gate	Bar	Harbor / Marina	Sculpture Garden
92	Stn A PO Boxes 25 The Esplanade	2	Coffee Shop	Café	Restaurant	Seafood Restaurant	Bakery	Beer Bar	Hotel	Fast Food Restaurant	Cocktail Bar	Park
96	Cabbagetown, St. James Town	2	Coffee Shop	Café	Restaurant	Italian Restaurant	Pub	Bakery	Market	Pizza Place	Park	Pet Store
97	First Canadian Place, Underground city	2	Coffee Shop	Café	Restaurant	Hotel	Steakhouse	Gastropub	Seafood Restaurant	Bar	Deli / Bodega	Gym
99	Church and Wellesley	2	Coffee Shop	Japanese Restaurant	Sushi Restaurant	Gay Bar	Restaurant	Men's Store	Hotel	Gastropub	Fast Food Restaurant	Mediterranean Restaurant
100	Business Reply Mail Processing Centre 969 Eastern	2	Yoga Studio	Auto Workshop	Pizza Place	Gym / Fitness Center	Recording Studio	Restaurant	Burrito Place	Skate Park	Smoke Shop	Brewer

From this cluster I created a graph on the frequency concentrations of Chinese Restaurants in some of the neighbourhood. Only selected those with positive concentration (i.e. Chinese restaurants that are in existence)

Here is the graph on the frequencies of occurrence of Chinese restaurants in some of the Neighbourhood in Cluster 3.



Next step: I do exploratory survey using Google map, starting with the lowest frequency (Ryerson, Garden District). Only interested in the low frequencies of occurrences.

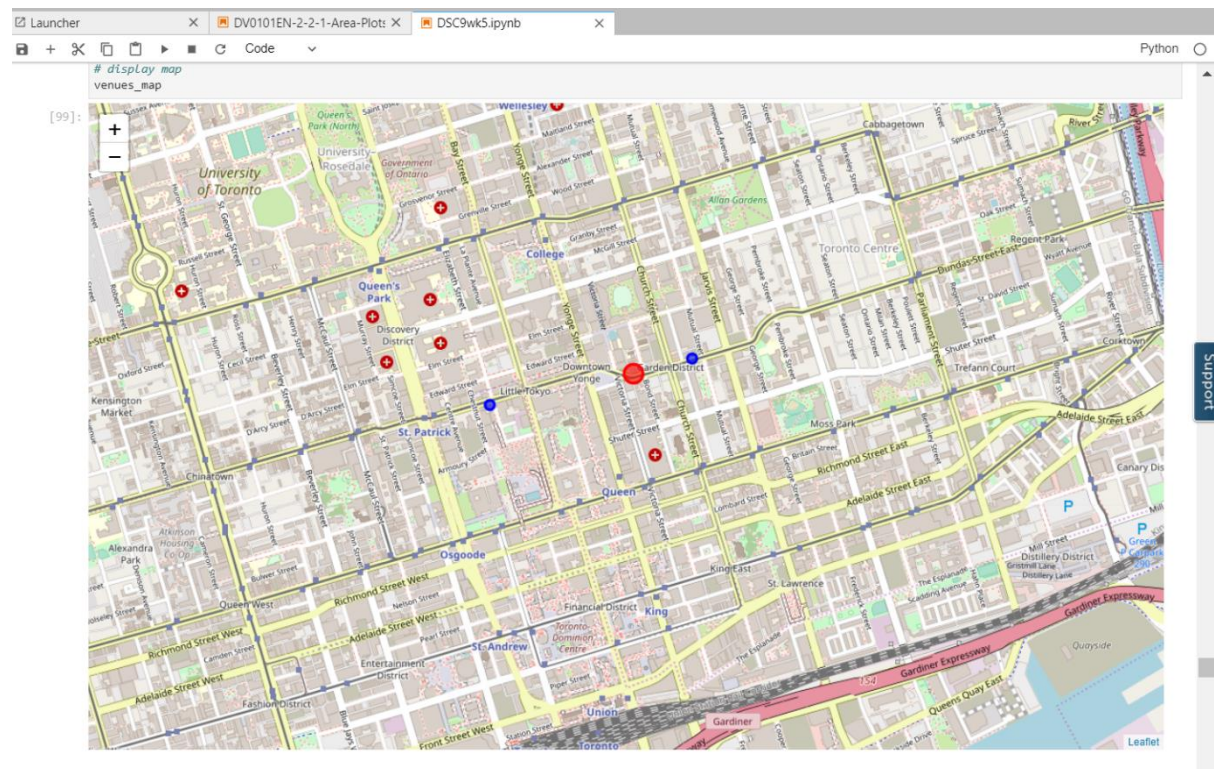


Through my exploration, I found a location that can be considered very busy at certain times and it is in the Ryerson-Garden District neighbourhood. The Yonge-Dundas Square as it is known, is not totally a square shape outdoor place. The intersection(Yonge-Dundas) is one of the busiest in Canada, with over 100,000 people crossing the city's first [pedestrian scramble](#) daily.^{[5][6][7]}

It is a venue for concerts and shows. The cinemas (cineplex), hotels, shopping centres and other eateries, are just nearby.

I further investigate about the number of Chinese restaurants around this square by calling Foursquare via API within the radius of 500 metres.

Latitude and longitude coordinates for Yonge-Dundas square is obtained via using the Geolocator.



The blue dots are the location of the Chinese Restaurants and the red is the location of the Yonge-Dundas square.

Further exploration using Foursquare returned rating values for

1 Good View Chinese Restaurant – 132 Dundas Street East

rating score (6.0)

2 Yueh Tung Chinese Restaurant – 126 Elizabeth Street

rating score (7.6)

Conclusion:

With those ratings it seemed another Chinese restaurant with better food quality around this vicinity would do well as the competitors are not that high in quality/service standards.

The cinema complex it is a crowd puller and so is the Square itself. Other crowd attracting venues close by are the Ed Mirvish theatre, Elgin and Winter Garden Theatre Centre and Toronto Eaton Centre. During the quieter period the financial district is not that far off and a good restaurant here certainly can cater for all that work in that part of the City. Parking Stations are available nearby plus it is accessible via the PATH. The PATH is a network of underground pedestrian tunnels, elevated walkways connecting the office towers of Downtown Toronto.

Any location around the 500 metres radius is a good choice though I would say to the south of Yonge-Dundas square is more suitable as it leads to the Union Train Station and closer to the financial district.

References:

[1] Toronto – Wikipedia

[2] Foursquare

[3] Google Maps

[4] Folium Maps