

# The Best Neighborhood for the Chinese Restaurant in Toronto

## Introduction

The target audiences are my friend and his team who would care about this problem - the best place for a new Chinese restaurant.

My friend is looking to open a Chinese restaurant in Toronto, and he is looking for the place. He asks for my help to recommend the best place where they can open it.

## Data

Importing the dataset about postal code, borough and neighborhood in Toronto, and the latitude and longitude of each neighborhood.

There are 103 neighborhoods, and I will decide which one is the best for opening a Chinese restaurant.

	PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M5A	Downtown Toronto	Harbourfront, Regent Park	43.654260	-79.360636
3	M6A	North York	Lawrence Heights, Lawrence Manor	43.718518	-79.464763
4	M7A	Queen's Park	Queen's Park	43.662301	-79.389494

I can get 10167 venues in Toronto by using Foursquare data, and I will use the Foursquare data to execute my idea.

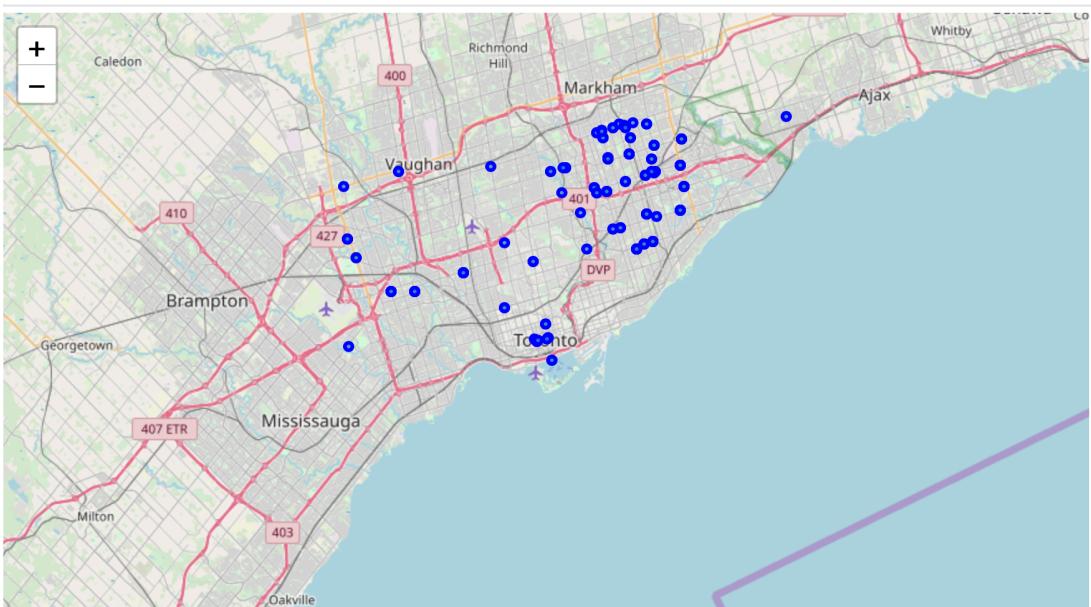
	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue ID	Venue Name	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	4b8991cbf964a520814232e3	Allwyn's Bakery	43.759840	-79.324719	Caribbean Restaurant
1	Parkwoods	43.753259	-79.329656	4bd4846a6798ef3bd0c5618d	Donalds Golf & Country Club	43.752816	-79.342741	Golf Course
2	Parkwoods	43.753259	-79.329656	4b8ec91af964a520053733e3	Graydon Hall Manor	43.763923	-79.342961	Event Space
3	Parkwoods	43.753259	-79.329656	4b149ea4f964a52029a523e3	Darband Restaurant	43.755194	-79.348498	Middle Eastern Restaurant
4	Parkwoods	43.753259	-79.329656	4bdccf4cafe8c9b6da285185	LCBO	43.757774	-79.314257	Liquor Store

## Methodology

- By judging if the most common venues in a neighborhood include 'Chinese Restaurant' or not, I can choose some neighborhoods which are suitable for opening the Chinese restaurant.
- By using Foursquare data, I can get rating and tips of each restaurant in these neighborhoods.
- By using the number, avg. rating and tips of restaurants in each neighborhood, I can decide the best neighborhood for the Chinese restaurant based on the content-based recommendation system.

Step 1: getting all 162 Chinese restaurant in Toronto, and showing them in the map.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue ID	Venue Name	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	5b6a321d340a58002cc0d9db	Omni Palace Noodle House	43.771047	-79.331570	Chinese Restaurant
1	Parkwoods	43.753259	-79.329656	584e235102b60e2d40263821	天天漁港 Captain's Catch	43.774961	-79.333873	Chinese Restaurant
2	Parkwoods	43.753259	-79.329656	4ae71b0cf964a52078a821e3	Noodle Delight	43.772399	-79.320209	Chinese Restaurant
3	Victoria Village	43.725882	-79.315572	55dded07498eeecf46ed3e0d9	Hakka Legend	43.726046	-79.286561	Chinese Restaurant
4	Victoria Village	43.725882	-79.315572	5269be82498e1cf7de5d5dd4	Super Hakka Restaurant	43.742892	-79.304949	Chinese Restaurant



Step 2: analyzing each neighborhood by venue category, and getting 3 common venues of each neighborhood

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	Adelaide, King, Richmond	Coffee Shop	Café	Bar
1	Agincourt	Chinese Restaurant	Coffee Shop	Indian Restaurant
2	Agincourt North, L'Amoreaux East, Milliken, St...	Chinese Restaurant	Vietnamese Restaurant	Bubble Tea Shop
3	Albion Gardens, Beaumont Heights, Humbergate, ...	Coffee Shop	Fast Food Restaurant	Sandwich Place
4	Alderwood, Long Branch	Burger Joint	Coffee Shop	Breakfast Spot

If there is 'Chinese restaurant' within 3 common venues of a neighborhood, this neighborhood is suitable for my goal. There are total 10 neighborhoods which are suitable for my goal.

	Neighborhood	OK for the Chinese restaurant
0	Agincourt	Y
1	Agincourt North, L'Amoreaux East, Milliken, St...	Y
2	Bayview Village	Y
3	Cedarbrae	Y
4	Clairlea, Golden Mile, Oakridge	Y

Step 3: by analyzing Chinese restaurants of these 10 neighborhoods, deciding the best neighborhood. There are 75 Chinese restaurants within these 10 neighborhoods.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue Category	Venue ID	Venue Latitude	Venue Longitude	Venue Name
0	Agincourt	43.7942	-79.262029	Chinese Restaurant	58388814809a776da0e00646	43.797885	-79.270585	Grandeur Palace 華麗宮 (Grandeur Palace 華麗宮)
1	Agincourt	43.7942	-79.262029	Chinese Restaurant	5377a256498ea252667e0f7b	43.787392	-79.268387	Congee Me 小米粥鋪
2	Agincourt	43.7942	-79.262029	Chinese Restaurant	5aa5a8c85f68b930df32dc53	43.801909	-79.295409	Fishman Lobster Clubhouse 魚樂軒
3	Agincourt	43.7942	-79.262029	Chinese Restaurant	4aedbb5df964a52069ce21e3	43.788068	-79.266768	Asian Legend 味香村
4	Agincourt	43.7942	-79.262029	Chinese Restaurant	4b2d6bcf964a5204ed624e3	43.784752	-79.277787	Maple Yip Seafood 陸羽海鮮酒家

Step 4: getting rating and tips of each Chinese restaurant by using Foursquare data.

	Neighborhood	Name	rating	tips
0	Agincourt	Grandeur Palace 華麗宮 (Grandeur Palace 華麗宮)	7.6	0.0
1	Agincourt	Congee Me 小米粥舖	7.4	2.0
2	Agincourt	Fishman Lobster Clubhouse Restaurant 魚樂軒	8.8	7.0
3	Agincourt	Asian Legend 味香村	7.0	20.0
4	Agincourt	Maple Yip Seafood 陸羽海鮮酒家	7.2	12.0

Step 5: Getting the number, avg rating and tips of Chinese restaurants for each neighborhood.

	Neighborhood	rating	tips	Num
0	Agincourt	7.177778	11.444444	9
1	Agincourt North, L'Amoreaux East, Milliken, St...	7.207692	14.538462	13
2	Bayview Village	7.260000	19.800000	5
3	Cedarbrae	7.233333	9.333333	6
4	Clairlea, Golden Mile, Oakridge	7.166667	10.000000	3
5	Clarks Corners, Sullivan, Tam O'Shanter	7.500000	6.777778	9
6	Dorset Park, Scarborough Town Centre, Wexford ...	7.350000	14.666667	6
7	Fairview, Henry Farm, Oriole	7.557143	13.142857	7
8	L'Amoreaux West	7.430000	7.700000	10
9	Maryvale, Wexford	7.100000	11.571429	7

Step 6: Standardization and ordering by total score (score = rating + tips + num)

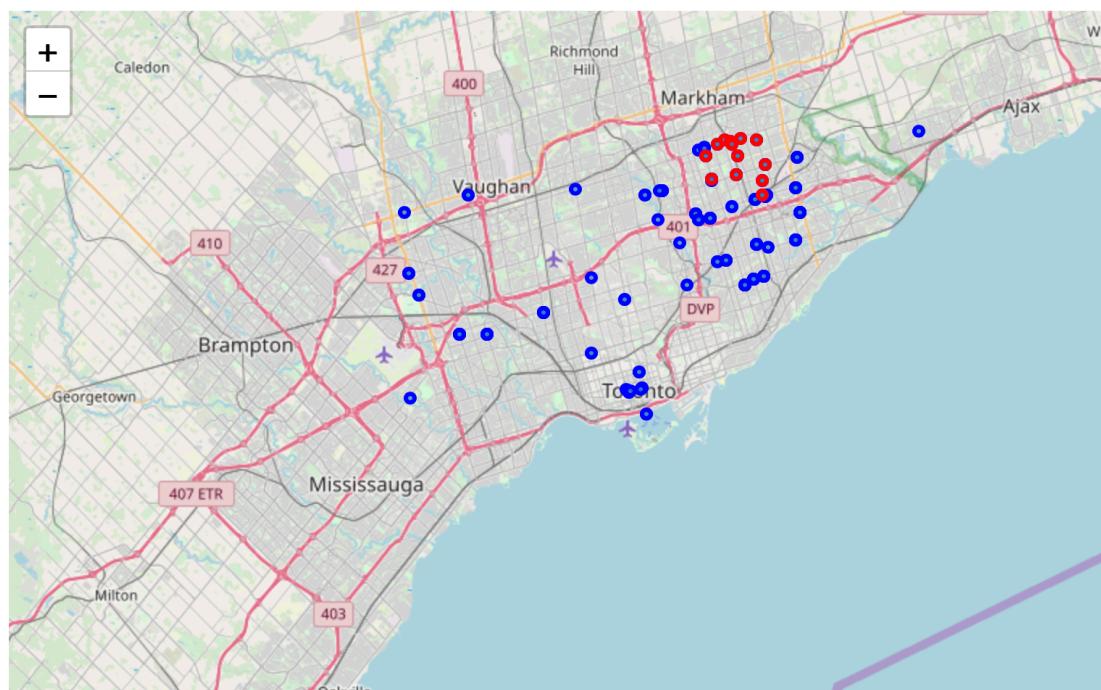
	Neighborhood	rating	tips	Num	score
0	Agincourt North, L'Amoreaux East, Milliken, St...	0.098759	0.122198	0.173333	0.394290
1	Bayview Village	0.099476	0.166422	0.066667	0.332564
2	Agincourt	0.098349	0.096192	0.120000	0.314541
3	Fairview, Henry Farm, Oriole	0.103547	0.110467	0.093333	0.307348
4	Dorset Park, Scarborough Town Centre, Wexford ...	0.100709	0.123275	0.080000	0.303984
5	L'Amoreaux West	0.101805	0.064719	0.133333	0.299858
6	Maryvale, Wexford	0.097283	0.097259	0.093333	0.287876
7	Clarks Corners, Sullivan, Tam O'Shanter	0.102764	0.056968	0.120000	0.279732
8	Cedarbrae	0.099110	0.078448	0.080000	0.257558
9	Clairlea, Golden Mile, Oakridge	0.098197	0.084051	0.040000	0.222248

## Result

The score of the neighborhood of Agincourt North, L'Amoreaux East, Milliken, Steeles East is the highest.

## Discussion

The neighborhood of Agincourt North, L'Amoreaux East, Milliken, Steeles East is the best place for opening a new Chinese restaurant.



## Conclusion

By using Foursquare data, I can get the number, avg rating and tips of restaurants in each neighborhood.

Based on content-based recommendation system, I can get the best score within neighborhoods.