



Capstone Project - The Battle of Neighborhoods

- Open Japanese Restaurant in Toronto, ON



Toronto is becoming most populated city in Canada, and becoming most popular multi-cultural city. For that reason, there are many kinds of restaurants exist such as Chinese, Korean, Japanese, French, and etc.

In Toronto, there are already so many Japanese restaurants exist. Investors want to open a Japanese restaurant in Toronto. They would like to find a place which can avoid a place having several competitors near by. Also, the place should attract the crowd.

Methodology

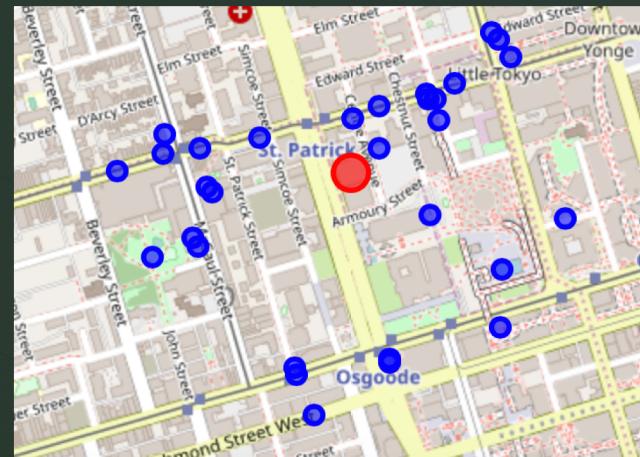
- Analyzing Problem
- Data Sourcing, Collecting data
- Foursquare Data
- Data Analysis
- K-mean Clustering
- Data Visualization
- Conclusion

Toronto/ Data

lists of Japanese Restaurants in Toronto(Foursquare)

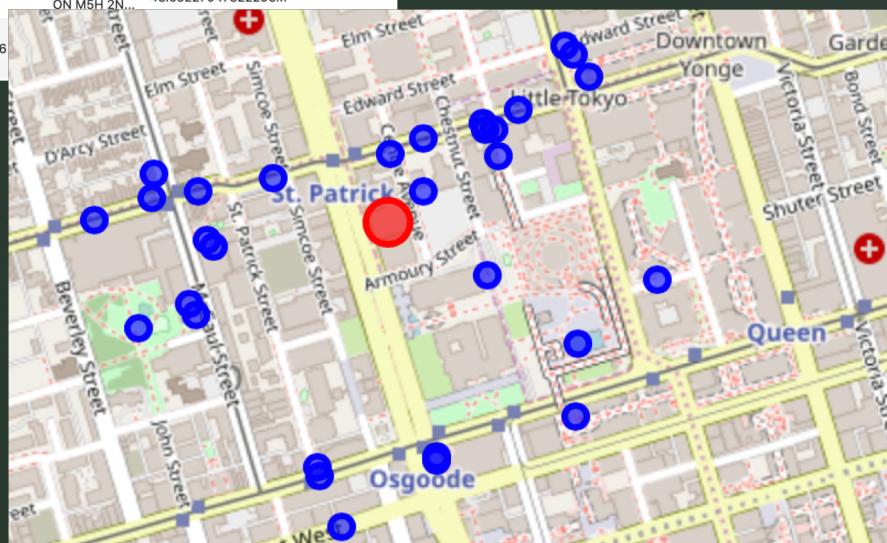
0	Kyoto House Japanese Restaurant	Sushi Restaurant	143 Dundas St. West	CA	Toronto	Canada	NaN	221	[143 Dundas St. West, Toronto ON, Canada]	[{"label": "display", "lat": 43.6553810598594..., "lon": -79.385270}	NaN	ON	4
1	Uncle Tetsu's Japanese Angel Cafe	Cafe	191 Dundas St. West	CA	Toronto	Canada	At Centre Ave.	118	[191 Dundas St. West (At Centre Ave.), Toronto...]	[{"label": "display", "lat": 43.65500131144402..., "lon": -79.386899}	NaN	ON	5
2	Fune Japanese Restaurant	Japanese Restaurant	100 Simcoe St.	CA	Toronto	Canada	at Pearl St.	609	[100 Simcoe St. (at Pearl St.), Toronto ON, Ca...	[{"label": "display", "lat": 43.64851365544565..., "lon": -79.386457}	NaN	ON	5
3	Spring Rolls Japanese Restaurant in Toronto	Theme Restaurant	40 Dundas St W Box 36,	CA	Toronto	Canada		382	[40 Dundas St W Box 36,, Toronto ON M5G 2C2, C...	[{"label": "display", "lat": 43.65610515821675..., "lon": -79.383495}	M5G 2C2	ON	5
4	Mt. Fuji Japanese Restaurant	Japanese Restaurant	NaN	CA	Toronto	Canada		541	[Toronto ON, Canada]	[{"label": "display", "lat": 43.658555, "lon": -79.384992}	NaN	ON	5
5	Akashiro Japanese Restaurant & Bar	Sushi Restaurant	220 Yonge St.	CA	Toronto	Canada	In Toronto Eaton Centre Urban Eatery	581	[220 Yonge St. (in Toronto Eaton Centre Urban ...)	[{"label": "display", "lat": 43.65596504293232..., "lon": -79.380541}	NaN	ON	4
6	KAKA	Japanese Restaurant	655 Bay Street	CA	Toronto	Canada	(Bay st & Elm st)	458	[655 Bay Street ((Bay st & Elm st)), Toronto ...]	[{"label": "display", "lat": 43.65745745164475..., "lon": -79.384192}	M5G 1Z4	ON	5
7	Kenzo Ramen	Ramen Restaurant	138 Dundas St. W	CA	Toronto	Canada	at Elizabeth St.	257	[138 Dundas St. W (at Elizabeth St.), Toronto ...]	[{"label": "display", "lat": 43.65554007474909..., "lon": -79.384866}	M5G 1C3	ON	5
8	Uncle Tetsu's Cheesecake (Uncle Tetsu's Japane...	Dessert Shop	598 Bay St	CA	Toronto	Canada	at Dundas St	366	[598 Bay St (at Dundas St), Toronto ON M5G 1M5...]	[{"label": "display", "lat": 43.65606287245643..., "lon": -79.383695}	M5G 1M5	ON	5

MAP



Neighborhood

0	Downtown Toronto	Neighborhood	NaN	CA	Toronto	Canada	NaN	174	[Toronto ON, Canada]	["label": "display", "lat": 43.6532316751744...	43.653232 -79
1	Textile Museum of Canada	Art Museum	55 Centre Avenue	CA	Toronto	Canada	University Ave. and Dundas St W.	74	[55 Centre Avenue (University Ave. and Dundas ...	["label": "display", "lat": 43.65439630500274...	43.654396 -79
2	Sansotei Ramen 三草亭	Ramen Restaurant	179 Dundas St. W	CA	Toronto	Canada	btwn Centre Ave. & Chestnut St.	144	[179 Dundas St. W (btwn Centre Ave. & Chestnut...	["label": "display", "lat": 43.65515746756124...	43.655157 -79
3	Japango	Sushi Restaurant	122 Elizabeth St.	CA	Toronto	Canada	at Dundas St. W	219	[122 Elizabeth St. (at Dundas St. W), Toronto ...	["label": "display", "lat": 43.65526771691681...	43.655268 -79
4	Cafe Plenty	Café	250 Dundas Street West	CA	Toronto	Canada	Simcoe Street	192	[250 Dundas Street West (Simcoe Street), Toron...	["label": "display", "lat": 43.65457125894357...	43.654571 -79
5	Manpuku まんぶく	Japanese Restaurant	105 McCaul St. Unit 29-31	CA	Toronto	Canada	at Dundas St. W.	277	[105 McCaul St. Unit 29-31 (at Dundas St. W), ...	["label": "display", "lat": 43.65361241179293...	43.653612 -79
6	Chatime 日出茶本	Bubble Tea Shop	132 Dundas St W	CA	Toronto	Canada	btwn Bay & University	268	[132 Dundas St W (btwn Bay & University), Toro...	["label": "display", "lat": 43.65554164147378...	43.655542 -79
7	Tsujiri	Tea Room	147 Dundas St W	CA	Toronto	Canada	at Elizabeth St	216	[147 Dundas St W (at Elizabeth St), Toronto ON...	["label": "display", "lat": 43.65537430780922...	43.655374 -79
8	Nathan Phillips Square	Plaza	100 Queen St W	CA	Toronto	Canada	at Bay St	351	[100 Queen St W (at Bay St), Toronto ON M5H 2N...	["label": "display", "lat": 43.65227047322295...	43.652270 -79
9	Karine's	Breakfast Spot	109 McCaul St.	CA	Toronto	Canada	at Dundas St. W	286	[109 McCaul St. (at Dundas St. W), Toronto ON M5H 2N...	["label": "display", "lat": 43.65227047322295...	43.652270 -79



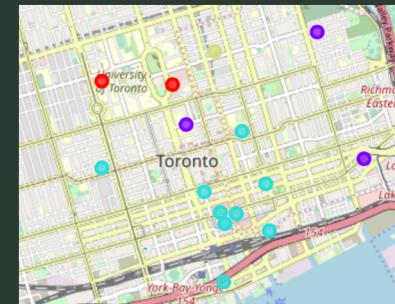
Data Analysis

- each neighborhood a Scores which helps to know if it will be suitable to open a Japanese restaurant with their neighborhood.
- This score represents is percentage of Japanese restaurants and general restaurants in the neighborhood.

	Neighborhood	Japanese Venues	Venues	score
0	Adelaide,King,Richmond	3	96	3.125000
3	Bedford Park,Lawrence Manor East	1	21	4.761905
5	Brockton,Exhibition Place,Parkdale Village	1	16	6.250000
6	Cabbagetown,St. James Town	1	28	3.571429
7	Central Bay Street	3	69	4.347826
8	Chinatown,Grange Park,Kensington Market	1	61	1.639344
9	Church and Wellesley	6	62	9.677419
10	Commerce Court,Victoria Hotel	3	100	3.000000
11	Davisville	1	34	2.941176
12	Design Exchange,Toronto Dominion Centre	3	100	3.000000
14	Fairview,Henry Farm,Oriole	1	26	3.846154
15	First Canadian Place,Underground city	3	100	3.000000
18	Harbord,University of Toronto	2	31	6.451613
19	Harbourfront East,Toronto Islands,Union Station	2	68	2.941176
20	Harbourfront,Regent Park	1	24	4.166667

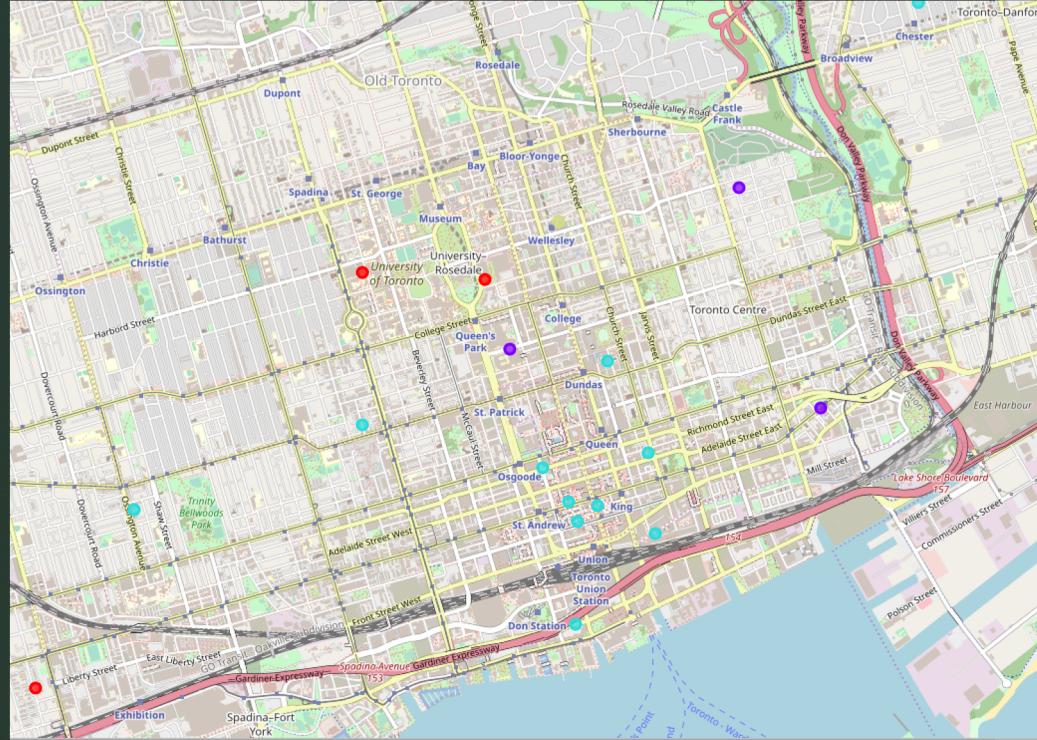
Kmean-Clustering

- k-means to cluster neighborhoods based on the scores.
- Below chart is the result.



Postal Code	Borough	Neighborhood	Latitude	Longitude	Japanese Venues	Venues	pointer	Cluster Labels	
2	M5A	Downtown Toronto	Harbourfront,Regent Park	43.654260	-79.360636	1	24	4.166667	1
4	M7A	Queen's Park	Not assigned	43.662301	-79.389494	2	29	6.896552	0
9	M5B	Downtown Toronto	Ryerson,Garden District	43.657162	-79.378937	3	96	3.125000	2
15	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418	2	84	2.380952	2
24	M5G	Downtown Toronto	Central Bay Street	43.657952	-79.387383	3	69	4.347826	1

-  **Red** Best.
-  **Light blue** good.
-  **Purple** bad.



The best spots would be the places with red outliers, however, there are only 3.

Moreover, since light blue color outliers are the most outliers in the map and they are good spots as well, so Investors can consider them as well.

Conclusion

- In *Toronto, for Mid-downtown it can be good place to open but since there are already many Japanese restaurants exist in Mid downtown, and Old Downtown, it would not be good choice to open at there.*
- According to the data, the best place recommended is College and St.George street. There is no same type of Japanese restaurants, but still crowded, or the place near University Rosedale would be good place to be opened as well with same reason.