

# The Battle of the Neighborhoods: Japanese Restaurant in Toronto

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APPLIED DATA SCIENCE CAPSTONE PROJECT



# Introduction

A night-time photograph of the Toronto skyline. The CN Tower is the most prominent feature on the left, illuminated with blue and white lights. To its left is the Rogers Centre, a large stadium with a blue, illuminated, retractable roof. The rest of the skyline consists of various skyscrapers and buildings, all lit up with warm yellow and orange lights. The lights reflect on the water in the foreground. The sky is a deep blue, transitioning from a lighter orange near the horizon to a darker blue at the top.

- ❑ Toronto is the most well-known city in Canada, and it is also the most densely populated
- ❑ Ideal location to start a new restaurant
- ❑ Choosing the right neighborhood is key to run a profitable business

# Data Acquisition and Cleaning

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- ❑ Neighborhood information regarding the boroughs, neighborhoods, and postcodes will be scraped from Wikipedia: [https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)
- ❑ The geographical coordinates will be taken from a CSV file: [http://cocl.us/Geospatial\\_data](http://cocl.us/Geospatial_data)
- ❑ The Foursquare API was used to find information regarding various locations and venues

	Borough	Neighborhood	Latitude	Longitude
0	Downtown Toronto	Regent Park , Harbourfront	43.654260	-79.360636
1	Downtown Toronto	Garden District, Ryerson	43.657162	-79.378937
2	Downtown Toronto	St. James Town	43.651494	-79.375418
3	East Toronto	The Beaches	43.676357	-79.293031
4	Downtown Toronto	Berczy Park	43.644771	-79.373306

# Exploratory Data Analysis: Visual Representation of Toronto Neighborhoods

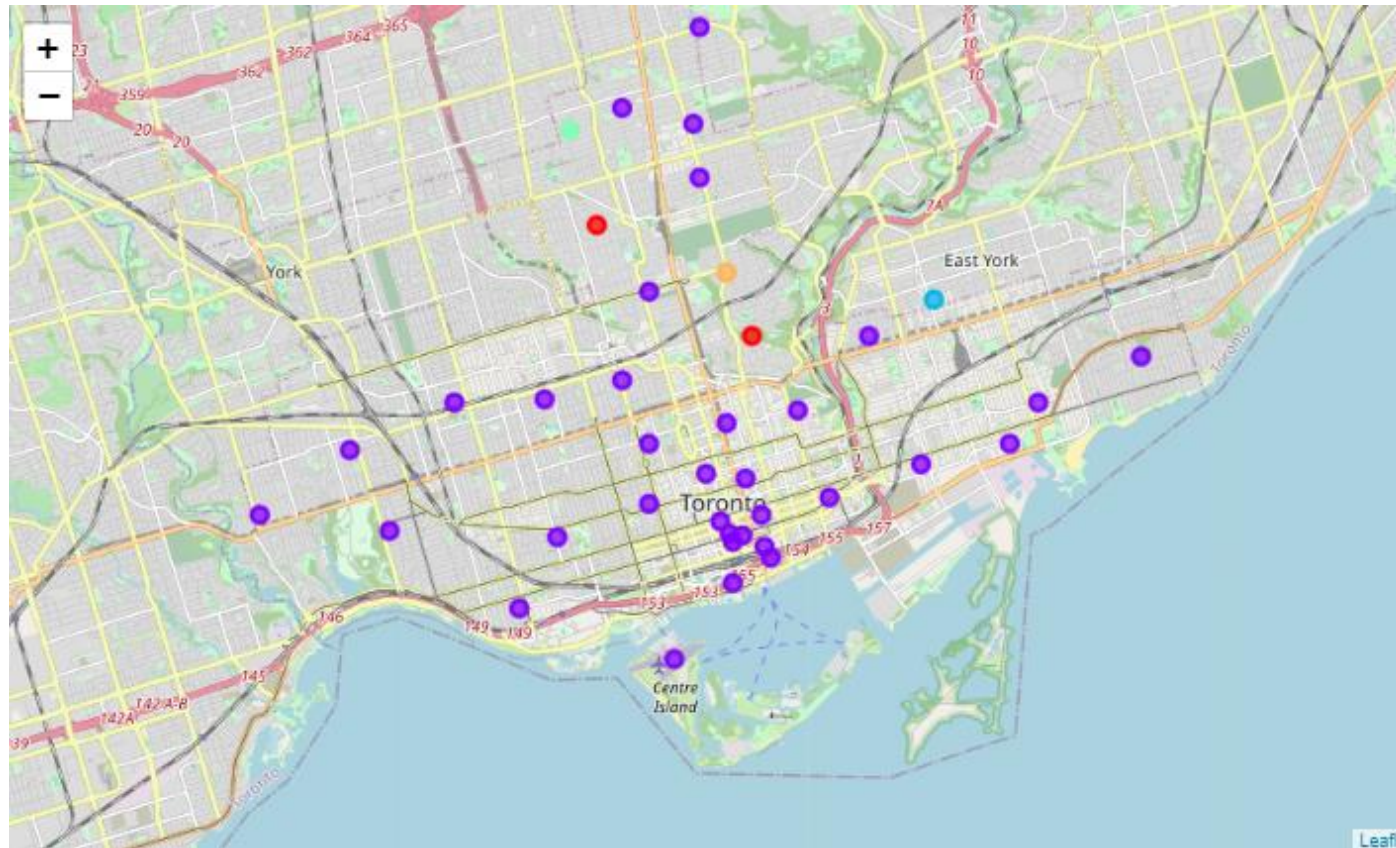
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# K-Means Cluster of Toronto Neighborhoods

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# Refining Data: Choosing only the neighborhoods with Japanese restaurants, hotels, parks, and yoga studios

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	Neighborhood	Japanese Restaurant	Hotel	Park	Yoga Studio
0	Berczy Park	0.016949	0.016949	0.016949	0.000000
5	Church and Wellesley	0.068493	0.027397	0.013699	0.027397
6	Commerce Court , Victoria Hotel	0.030000	0.060000	0.010000	0.000000
11	Enclave of M5E	0.030928	0.030928	0.020619	0.010309
14	Garden District, Ryerson	0.030000	0.020000	0.010000	0.000000
15	Harbourfront East , Union Station , Toronto Is...	0.010000	0.040000	0.020000	0.000000
25	Richmond , Adelaide , King	0.010753	0.021505	0.010753	0.000000
29	St. James Town	0.012195	0.024390	0.024390	0.000000

# Discussion

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- ❑ The neighborhood of Church and Wellesley may be a safe choice to open a new Japanese restaurant as it already has a many Japanese restaurants in the area, and also has a hotel, park, and yoga studio nearby.
- ❑ However, there are seven other neighborhoods with hotels, parks, and yoga studios, which may be better choices, as there is a possibility that the neighborhood of Church and Wellesley is already too saturated.
- ❑ The existing restaurants may have an established clientele and a loyal consumer base, which may make it challenging for a new restaurant to gain popularity in that neighborhood.
- ❑ Given that there is a scope of starting the new restaurant in seven other neighborhoods, it may be fruitful to explore these other locations first.

# Conclusion

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- ❑ Further research with more specific objectives should be carried out to properly select the neighborhood
- ❑ Most location and venue information is readily available with the Foursquare API
- ❑ Tools such as Numpy, Geopy, and Folium are invaluable in developing numerical and visual representation of data for analysis and decision making