

# The Battle of Neighborhoods - Presentation



# INTRODUCTION

- As Indian food is popular among the Asian community, an entrepreneur might think of opening its business in areas where the Asian community resides. With that purpose in mind, finding the location to open such a restaurant is one of the most important decisions for this entrepreneur and I am designing this project to help him find the most suitable location in the city of Toronto.

# BUSINESS PROBLEM

- The objective of this capstone project is to find the most suitable location for the entrepreneur to open a new Indian Restaurant in Toronto, Canada.
- By using data science methods and tools along with machine learning algorithms such as clustering, this project aims to provide solutions to answer the business question: In Toronto, if an entrepreneur wants to open an Indian Restaurant, where should they consider opening it?

# TARGET AUDIENCE

- The entrepreneur who wants to find the location to open an authentic Indian restaurant.

# DATA

- To solve this problem, we will need below data:
- • List of neighborhoods in Toronto, Canada
- • Latitude and Longitude of these neighborhoods
- • Venue data related to Indian restaurants. This will help us find neighborhoods that are more suitable to open an IndianRestaurant

# EXTRACTING THE DATA

- . ● The scrapping of Toronto neighborhoods via Wikipedia
- ● Getting Latitude and Longitude data of these neighborhoods via Geocoder package
- ● Using Foursquare API to get venue data related to these neighborhoods

# METHODOLOGY

- Extracting the list of neighborhoods 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)
- Use Foursquare API to pull the list of top 100 venues within 500 meters radius in Toronto.

# Potential locations to open an Indian Restaurant

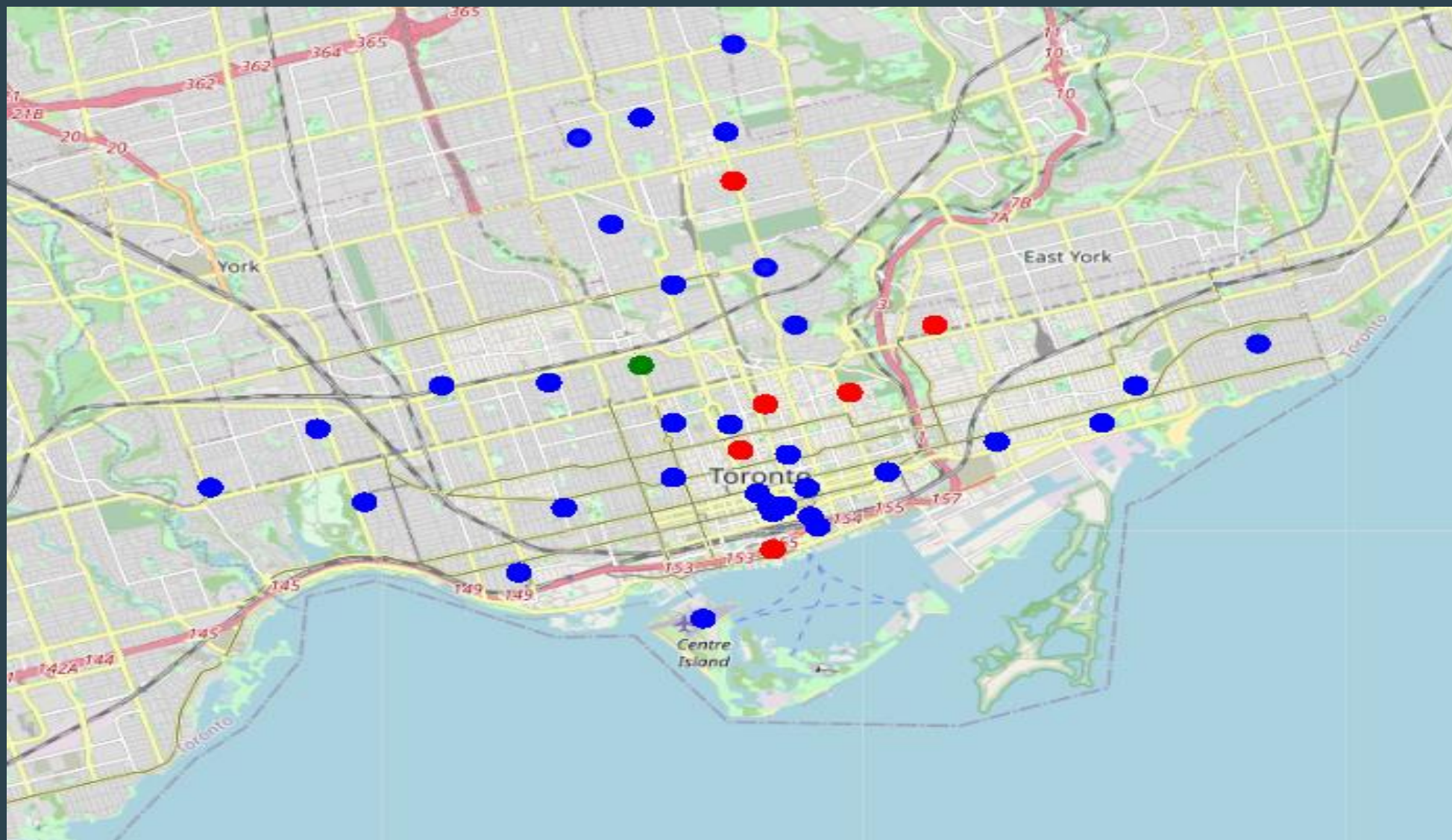
	Postal Code	Borough	Neighbourhood	Latitude	Longitude
0	M4E	East Toronto	The Beaches	43.676357	-79.293031
1	M4K	East Toronto	The Danforth West, Riverdale	43.679557	-79.352188
2	M4L	East Toronto	India Bazaar, The Beaches West	43.668999	-79.315572
3	M4M	East Toronto	Studio District	43.659526	-79.340923
4	M4N	Central Toronto	Lawrence Park	43.728020	-79.388790



- I have clustered the neighborhoods in Toronto into 3 clusters based on their frequency of occurrence for “Indian food”. Based on the results (the concentration of clusters), I will be able to recommend the ideal location to open the restaurant.

	Neighbourhood	Indian Restaurant	Cluster Labels	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
36	The Danforth West, Riverdale	0.023256	0	43.679557	-79.352188	Re: Reading	43.678507	-79.347678	Bookstore
6	Church and Wellesley	0.013333	0	43.665860	-79.383160	Alexander Wood Statue	43.663702	-79.380301	Sculpture Garden
6	Church and Wellesley	0.013333	0	43.665860	-79.383160	Noah's Natural Foods	43.668532	-79.385885	Food & Drink Shop
6	Church and Wellesley	0.013333	0	43.665860	-79.383160	A&W	43.666415	-79.378235	Fast Food Restaurant
6	Church and Wellesley	0.013333	0	43.665860	-79.383160	Flash	43.664319	-79.380190	Strip Club

# RESULTS



# RESULT

- The results from k-means clustering show that we can categorize Toronto neighborhoods into 3 clusters based on how many Indian restaurants are in each neighborhood:
- • Cluster 0: Neighborhoods with the less number of Indian restaurants.
- • Cluster 1: Neighborhoods with no Indian restaurants.
- • Cluster 2: Neighborhoods with a more number of Indian restaurants
- The results are visualized in the above map with Cluster 0 in green, Cluster 1 in blue, Cluster 2 in red.

# RECOMMENDATIONS

- Most of the Indian restaurants are in cluster 2 which is around Central Bay Street, Church and Wellesley, Berczy Park, Union Station, Richmond, lowest in Cluster 1 areas which are in North Toronto West and Parkade areas.
- Also, there are good opportunities to open near St James Town, Cabbagetown Looking at nearby venues it seems cluster 0 might be a good location as there are not a lot of Indian restaurants in these areas.
- Therefore, this project recommends the entrepreneur to open an authentic Indian restaurant in these locations.