

Capstone Project REPORT

The Battle of Neighbourhoods

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Background

Relocation has become more and more common with the age of internet. Opportunities are now more accessible for people across the country and even the world. This project will review different neighbourhoods, and how we can use data to identify similar locations based on restaurants that were in your hometown.

Business Problem

Relocation is a common theme amongst young millennials today trying to pursue their careers nowadays. They will want to find similar types of neighbourhoods and restaurants that they are accustomed to in their hometowns. We will explore how clustering can be used to pinpoint the areas that they would like to live at.

Data

This project will use Foursquare location data to identify comparable neighbourhoods based on restaurants and event data. Information will be gathered from https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M which will be clustered for this project.

Clustering will help solve what neighbourhoods that young millennials will like to relocate based on their previous neighbourhoods.

Methodology

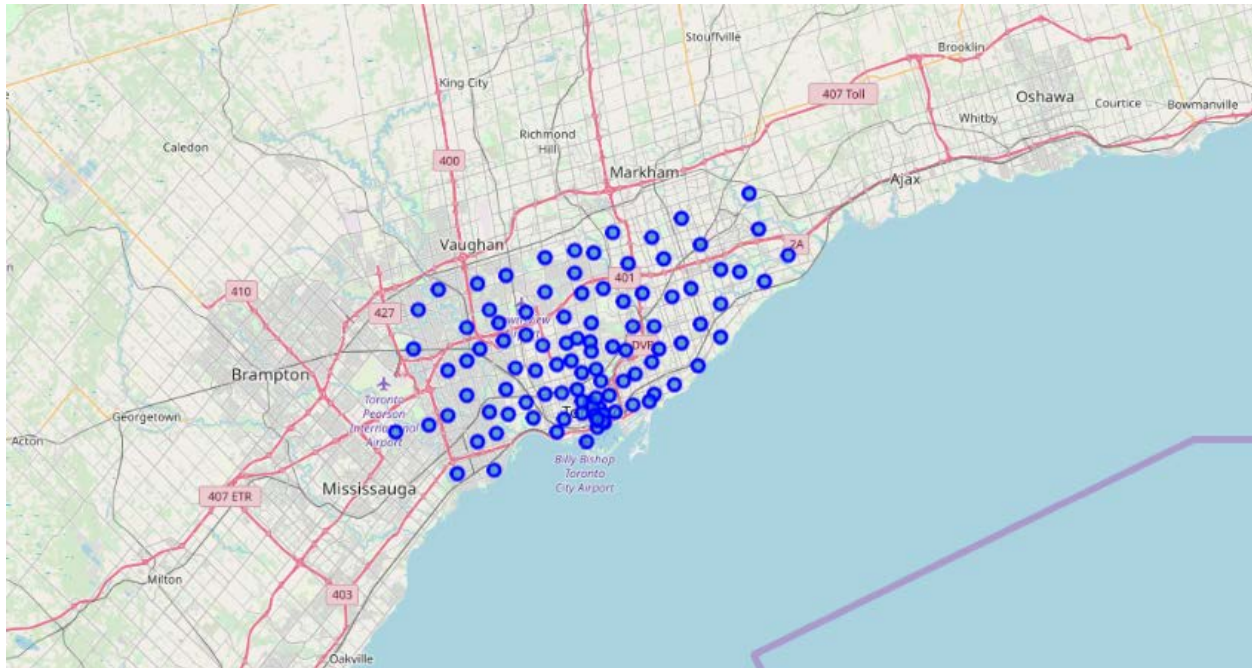
- Collect Data
- Explore and Understand Data
- Clean and prepare Data
- K-Means clustering to perform city segmentation
- Create models based on analysis

Results & Discussion

Collected location data from Foursquare API interface.

Extracted Postal Codes, Boroughs, Neighbourhoods in Toronto..

Clustered neighbourhoods in order to find existing business establishments and venues in order to find similar neighbourhoods to their hometowns.



Clusters

- Cluster 1 – 13 Neighbourhoods with most common venue being 9 coffee shops
- Cluster 2 – 1 Neighbourhood with 1 similar coffee shop
- Cluster 3 – 1 Neighbourhood with 1 similar coffee shop
- Cluster 4 – 2 Neighbourhoods with 1 similar grocery store and 1 café
- Cluster 5 – 1 Neighbourhood with 1 similar coffee shop

Cluster 1

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Harbourfront,Regent Park	Coffee Shop	Café	Park	Pub	Bakery
1	Ryerson,Garden District	Coffee Shop	Clothing Store	Café	Cosmetics Shop	Thai Restaurant
3	Berczy Park	Coffee Shop	Cocktail Bar	Café	Seafood Restaurant	Bakery
4	Central Bay Street	Coffee Shop	Café	Italian Restaurant	Bubble Tea Shop	Bar
7	Harbourfront East,Toronto Islands,Union Station	Coffee Shop	Aquarium	Hotel	Italian Restaurant	Café
8	Design Exchange,Toronto Dominion Centre	Coffee Shop	Hotel	Café	Deli / Bodega	Seafood Restaurant
9	Commerce Court,Victoria Hotel	Coffee Shop	Café	Hotel	Restaurant	Deli / Bodega
10	Harbord,University of Toronto	Café	Restaurant	Bookstore	Japanese Restaurant	Bar
12	CN Tower,Bathurst Quay,Island airport,Harbourf...	Airport Lounge	Airport Terminal	Airport Service	Harbor / Marina	Sculpture Garden
13	Rosedale	Park	Playground	Trail	Deli / Bodega	Eastern European Restaurant
15	Cabbagetown,St. James Town	Coffee Shop	Restaurant	Park	Bakery	Pizza Place
16	First Canadian Place,Underground city	Coffee Shop	Café	Hotel	Steakhouse	Bakery
17	Church and Wellesley	Japanese Restaurant	Coffee Shop	Gay Bar	Sushi Restaurant	Burger Joint

Cluster 2

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
14	Stn A PO Boxes 25 The Esplanade	Coffee Shop	Restaurant	Café	Italian Restaurant	Seafood Restaurant

Cluster 3

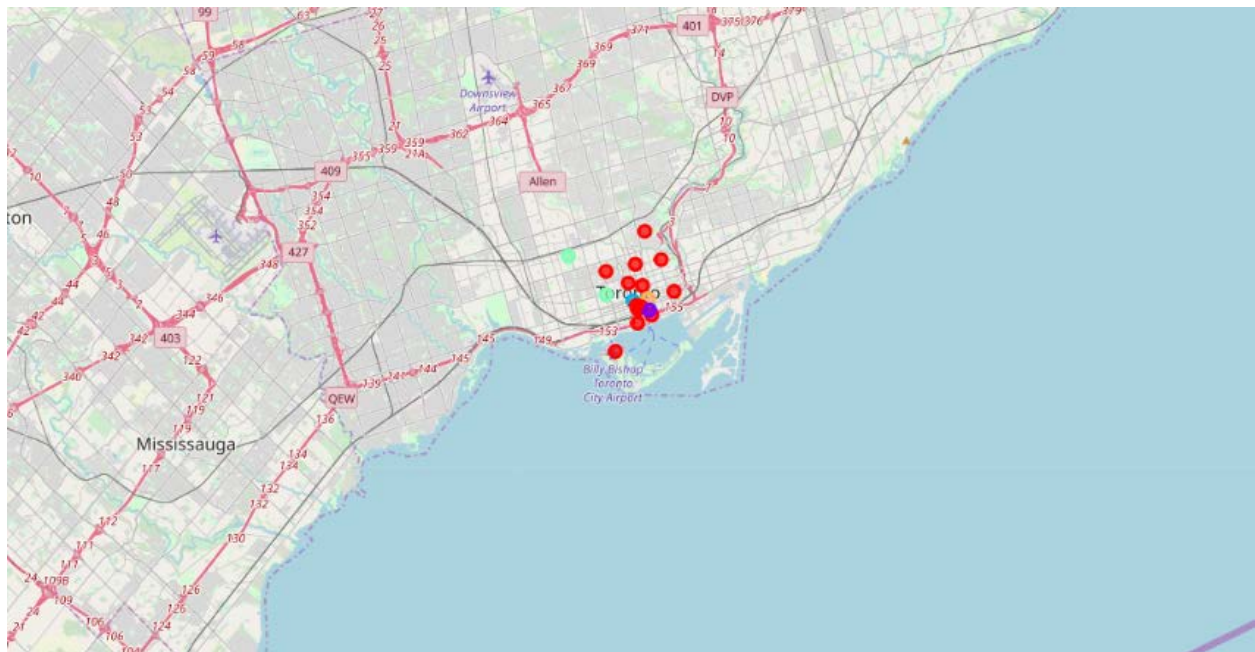
	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
6	Adelaide,King,Richmond	Coffee Shop	Café	Steakhouse	Bar	Thai Restaurant

Cluster 4

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
5	Christie	Grocery Store	Café	Park	Nightclub	Diner
11	Chinatown,Grange Park,Kensington Market	Café	Vietnamese Restaurant	Bar	Vegetarian / Vegan Restaurant	Chinese Restaurant

Cluster 5

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
2	St. James Town	Restaurant	Coffee Shop	Café	Hotel	Breakfast Spot



These clusters give as an overview of all the neighbourhoods that will have similar coffee shops in the area. Cluster 1 has the most similarities along with diversity.

Conclusion

The k-means clustering technique gives a good idea on what neighbourhoods these young millenials would like to move based on the venues identified using Foursquare API.

Cluster 1 neighbourhoods would be a great fit for relocation to make the transition easier when moving to a new city.