Segmenting neighborhoods of Toronto and Manhattan using Data from FourthSquare

Introduction

- help an entrepreneur Mr. X to grow its business.
- X opened a restaurant in Manhattan last year and had seen a huge success.
- Mr. X wiches to expand fastly and to open a second restaurant which serves the same customer base but this time in another city of another country, let’s suppose it is Toronto.

Data

- Explore, segment, and cluster the neighborhoods in Manhattan and Toronto. We download two datasets from the week 3 of this course.
- In Dataset 1 & Dataset 2, a list of all the neighborhoods in Manhattan and Toronto respectively with their geospatial information is available.
- We combine the 2 Datasets which results in a single dataset containing information about both cities' neighborhoods.
- Having the geospatial information, we link the data to FourthSquare, hence for each neighborhood we find the venues (restaurants/ coffee shops...) which are nearby.
- So far, for each neighborhood we have the venues which are nearby.
- We groupby the data, so instead of having 100 rows for a neighborhood we get a single line with the neighborhood and the average number of each of the venues categories nearby.

36	Manhattan	Tudor City	40.746917	-73.971219
37	Manhattan	Stuyvesant Town	40.731000	-73.974052
38	Manhattan	Flatiron	40.739673	-73.990947
39	Manhattan	Hudson Yards	40.756658	-74.000111
40	East Toronto	The Beaches	43.676357	-79.293031
41	East Toronto	The Danforth West,Riverdale	43.679557	-79.352188
42	East Toronto	The Beaches West,India Bazaar	43.668999	-79.315572
43	East Toronto	Studio District	43.659526	-79.340923
44	Central Toronto	Lawrence Park	43.728020	-79.388790
45	Central Toronto	Davisville North	43.712751	-79.390197
46	Central Toronto	North Toronto West	43.715383	-79.405678
47	Central Toronto	Davisville	43.704324	-79.388790
48	Central Toronto	Moore Park,Summerhill East	43.689574	-79.383160
49	Central Toronto	Deer Park,Forest Hill SE,Rathnelly,South Hill,...	43.686412	-79.400049
50	Downtown Toronto	Rosedale	43.679563	-79.377529
51	Downtown Toronto	Cabbagetown,St. James Town	43.667967	-79.367675
52	Downtown Toronto	Church and Wellesley	43.665860	-79.383160
53	Downtown Toronto	Harbourfront,Regent Park	43.654260	-79.360636
54	Downtown Toronto	Ryerson,Garden District	43.657162	-79.378937
55	Downtown Toronto	St. James Town	43.651494	-79.375418

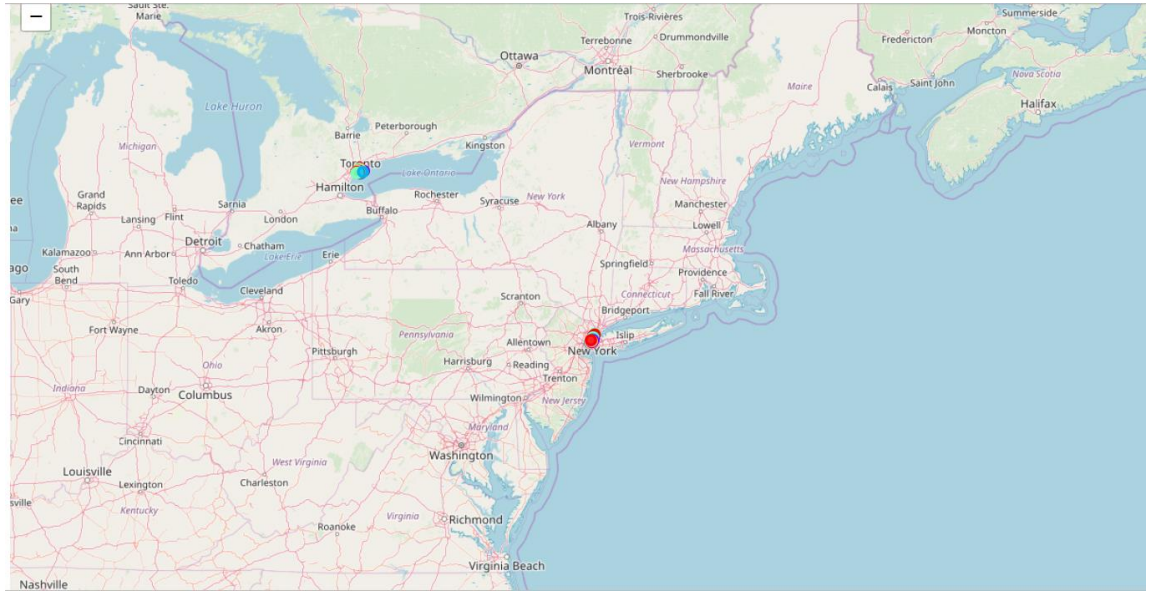
Methodology

- We apply the k-means clustering algorithm based on the previous information.
- For each neighborhood we get a label and the neighborhoods are now clustered.

- To check where Mr. X must open its restaurant, we look up where its old restaurant was, check to which cluster does it belong, and then find neighborhoods in Toronto which belong to the

Results

- The result is a Foilum map that shows similarility between neighborhoods in Toronto & Manhattan => 5 clusters



Conclusion

- Data science is helpful to tackle daily life problems.