

# Capstone Project – The battle of neighborhoods

Exploration of the neighborhood data of the cities  
Toronto and New York

# 1. Introduction

***What are the characteristics of someones neighborhood in NY (e.g. in Riverdale, NYC)?***

***If he/she would like to move to Toronto, which neighborhoods are comparable and due to which characteristics?***

## 2. Data

- Usage of Foursquare data for finding characteristics of neighborhoods regarding their venues
- In total 7739 venues for 409 neighborhoods

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	Brookbanks Park	43.751976	-79.332140	Park
1	Parkwoods	43.753259	-79.329656	Variety Store	43.751974	-79.333114	Food & Drink Shop
2	Victoria Village	43.725882	-79.315572	Victoria Village Arena	43.723481	-79.315635	Hockey Arena
3	Victoria Village	43.725882	-79.315572	Tim Hortons	43.725517	-79.313103	Coffee Shop
4	Victoria Village	43.725882	-79.315572	Portugril	43.725819	-79.312785	Portuguese Restaurant

### 3. Methodology

- After wrangling the data (one hot encoding, grouping) k-means-clustering was performed
- Parameter: n-cluster: 5 ; random state: 0

## 4. Results

- Riverdale, NYC is characterized by the following venue categories

	Neighborhood	Bank	Bus Station	Farmers Market	Food Truck	Gym	Home Service	Moving Target	Park	Playground	Plaza
298	Riverdale	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.230769	0.153846	0.076923

- Park and Playground are more represented than the other categories

## 4. Results

- Riverdale is in cluster 3
- Comparable cities in Toronto according to the cluster are the following

	City	Neighborhood	Bank	Bus Station	Farmers Market	Food Truck	Gym	Home Service	Moving Target	Park	Playground	Plaza
7	Toronto	Milliken, Agincourt North, Steeles East, L'Amoreaux	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.250000	0.250000	0.000000
8	Toronto	Moore Park, Summerhill East	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.500000	0.000000
12	NYC	Riverdale	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.230769	0.153846	0.076923
13	Toronto	Scarborough Village	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.333333	0.000000

## 5. Discussion

- The found neighborhoods can be used as a first approach when searching a neighborhood in Toronto similar to Riverdale, NYC
- This result grounds mainly in the two venue categories Park and Playground
- Refinement could be done by weighting the venue categories according to one personal preferences

## 6. Conclusion

- This analysis gives an approach on how to select similar neighborhoods to the current one when moving to another city
- The approach was performed as an example for the cities Toronto and New York
- Several neighborhoods in Toronto with similar characteristics to Riverdale were found