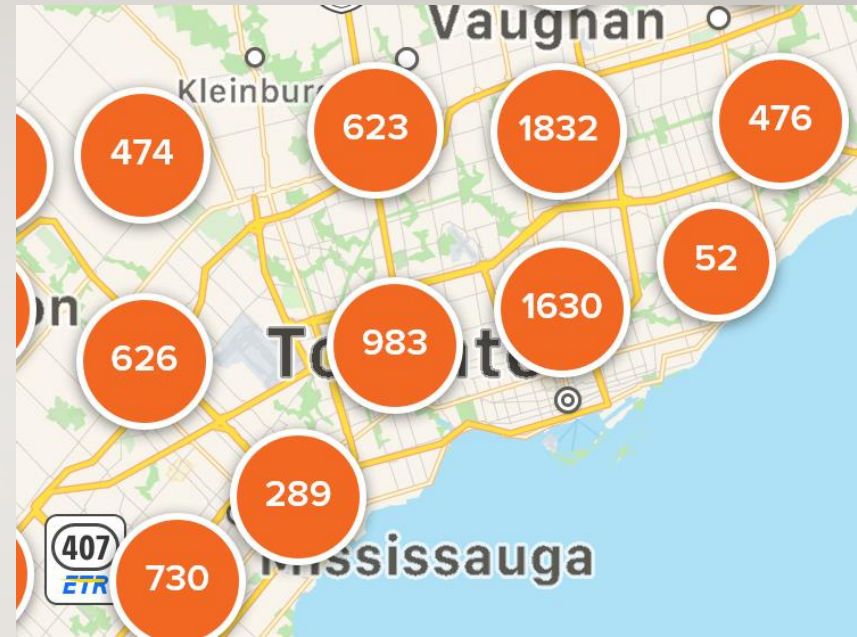# FINDING MY NEW HOME IN TORONTO

BY DAR'YA REDKA

How to navigate zoocasa.com if you don't know what neighbourhoods to concentrate on?

A snapshot from zoocasa.com showing homes for sale in the City of Toronto on Novermber 11th, 2019

My favourite neighbourhood is Forest Hill South, but it's too expensive. Can I find neighbourhoods similar to it but with cheaper home?

What features of Forest Hill South do I care about and what data will I need?

1. Safety/Crime Rate and 2. Population Density from Toronto Police Open Data Portal https://data.torontopolice.on.ca/datasets/af500b5abb7240399853b35a2362d0c0_0?geometry=-80.098%2C43.542%2C-78.659%2C43.890

3. Access to Venues, from Foursquare API: https://developer.foursquare.com/

4. Average home prices for each neighbourhood: https://www.moneysense.ca/spend/real-estate/where-to-buy-2019-toronto/
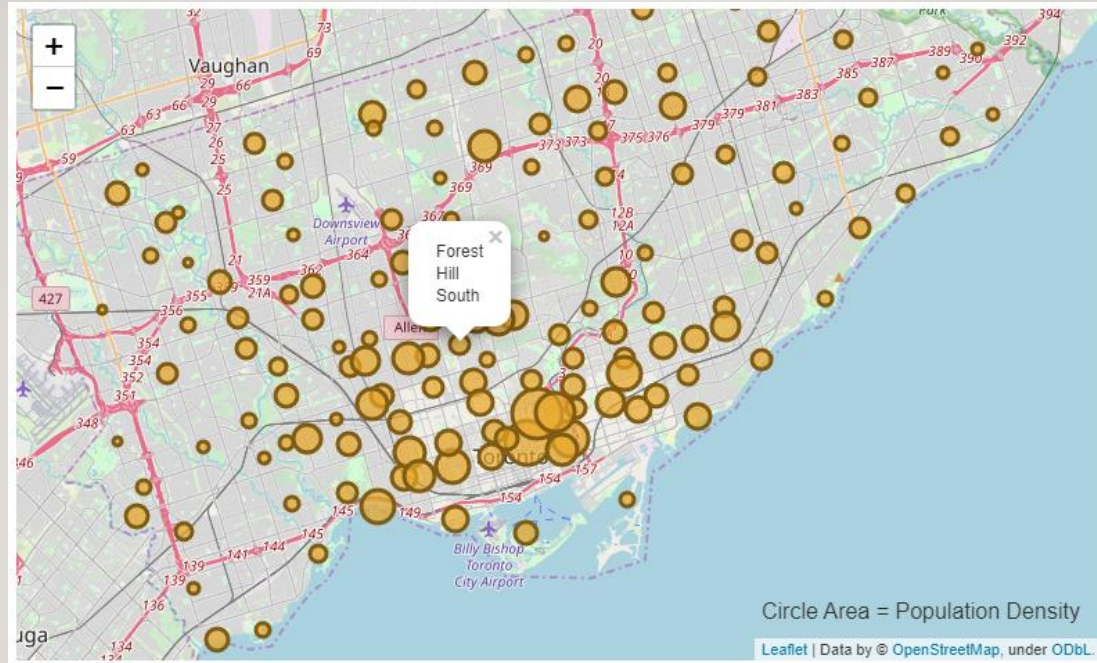
# Toronto Neighbourhoods vary dramatically by their crime rates (robbery per capita shown as an example of five crime measures)
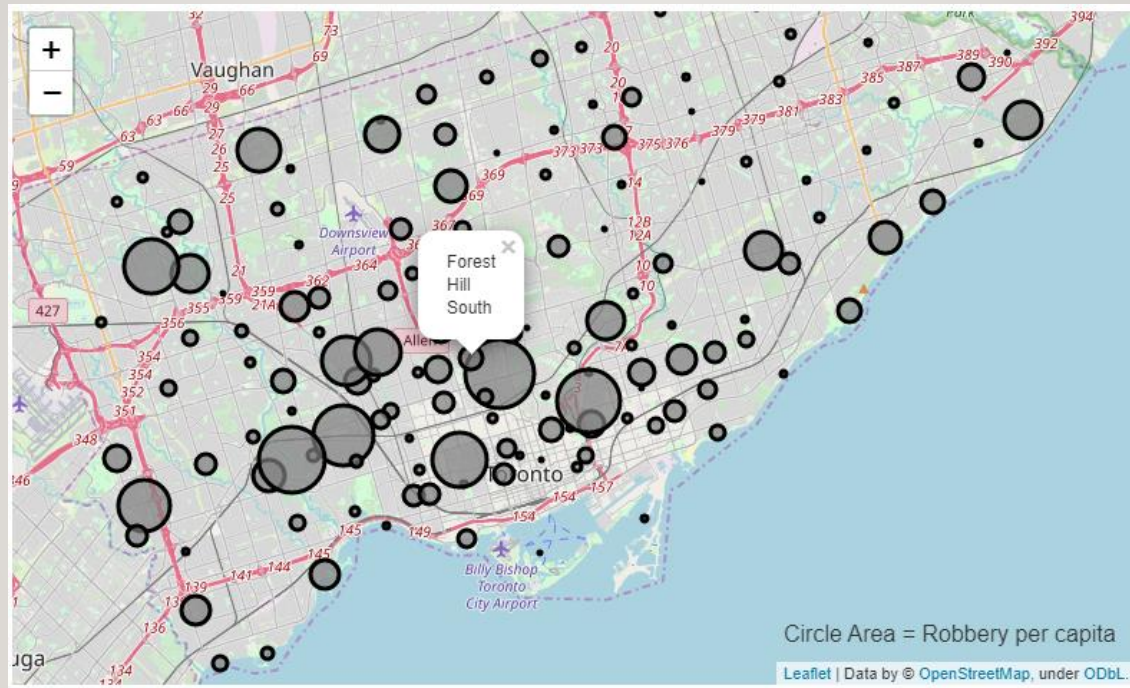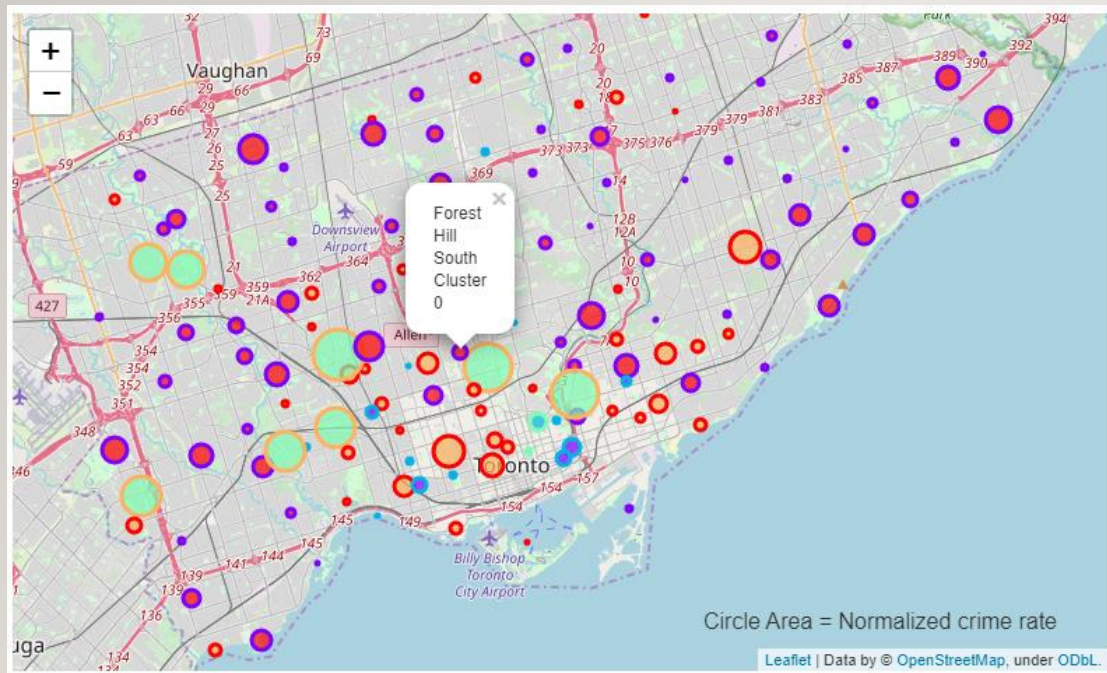
Population Density varies too
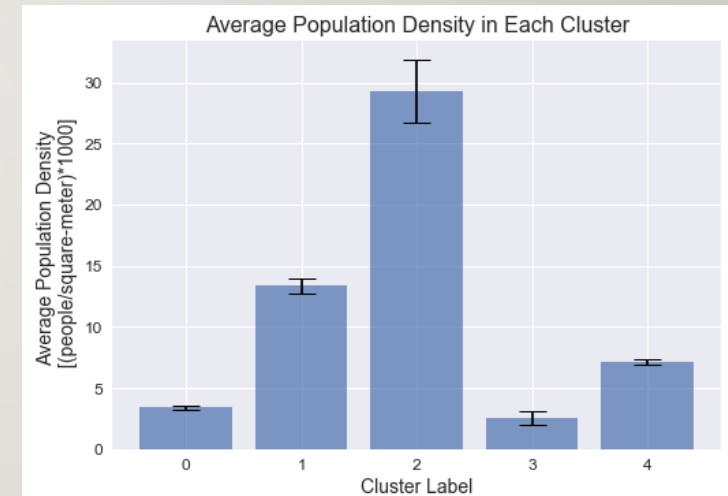

Circle Area = Population Density

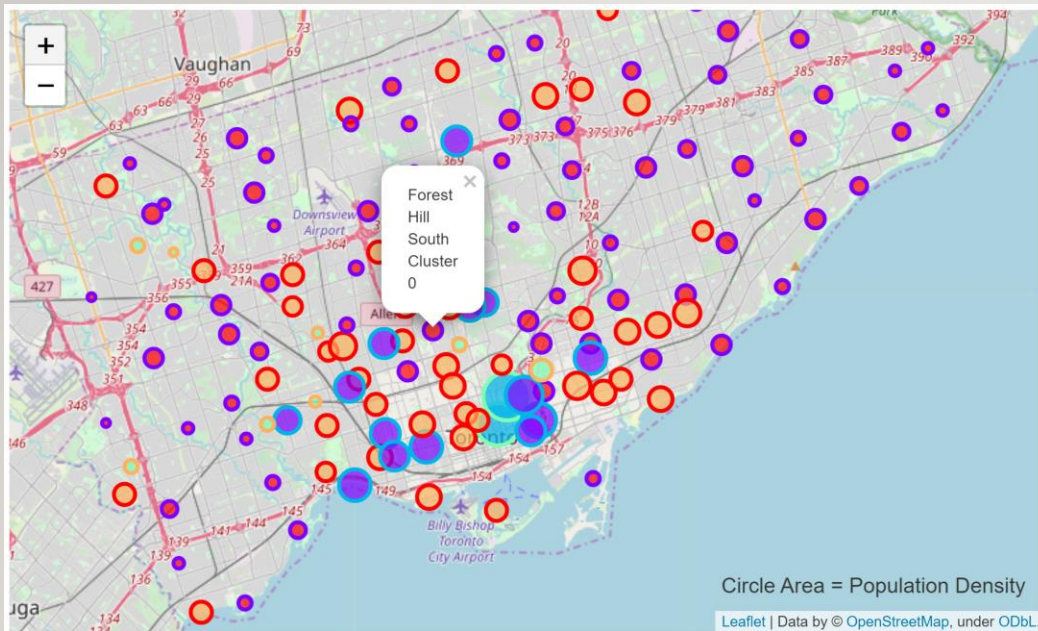# K-Means clustering segments the neighbourhoods into 5 clusters, and those clusters noticeably differ in crime rate

Circle Area = Normalized crime rate

Average Normalized Crime Rate in Each Cluster
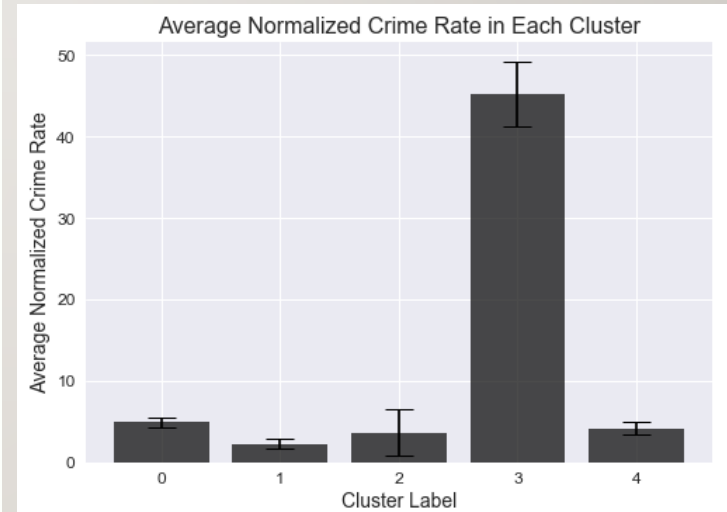
Clusters also noticeably differ in population density

Circle Area = Population Density

Leaflet | Data by © OpenStreetMap, under ODbL.

Venue categories mostly did not significantly differ between clusters

Average Venue Category Counts in Each Cluster
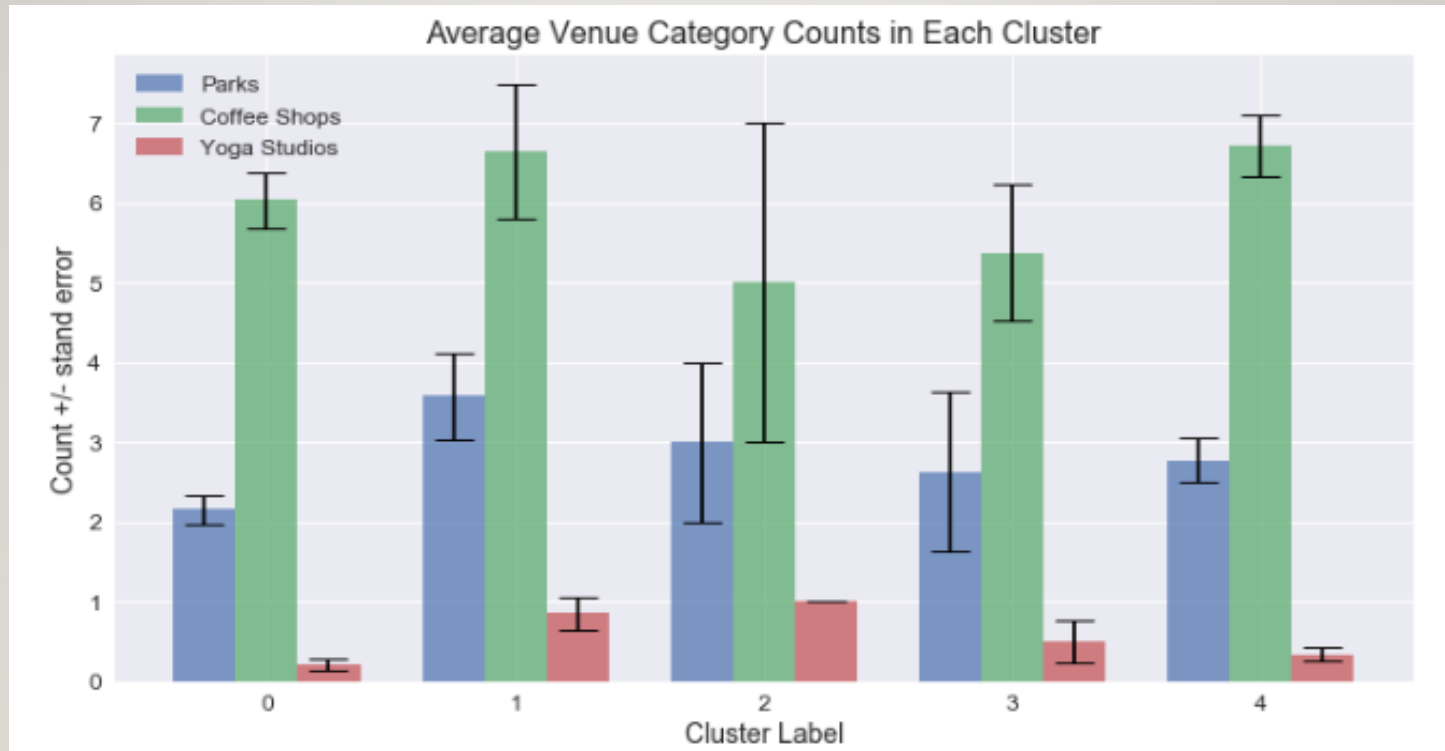
As expected, when average home price data were added to the dataset after k-means clsutering, each cluster had a wide range of home prices, and the means between clusters were similar

Forest Hill
South
Cluster 0
$1319395.0

Circle Area = Average home price

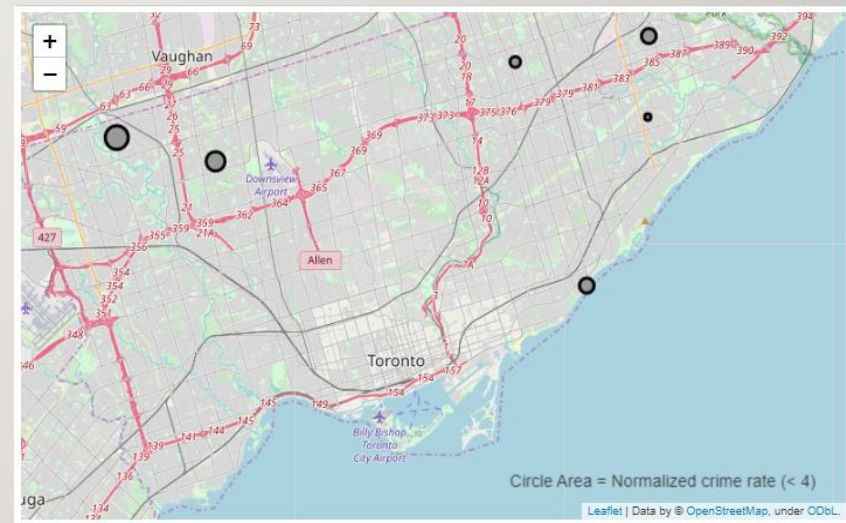Leaflet | Data by © OpenStreetMap, under ODbL.

Average Home Price in Each Cluster
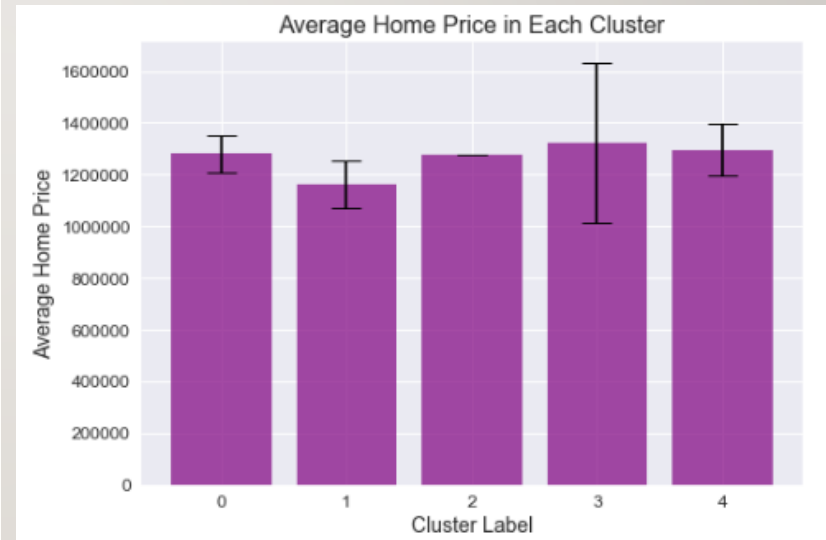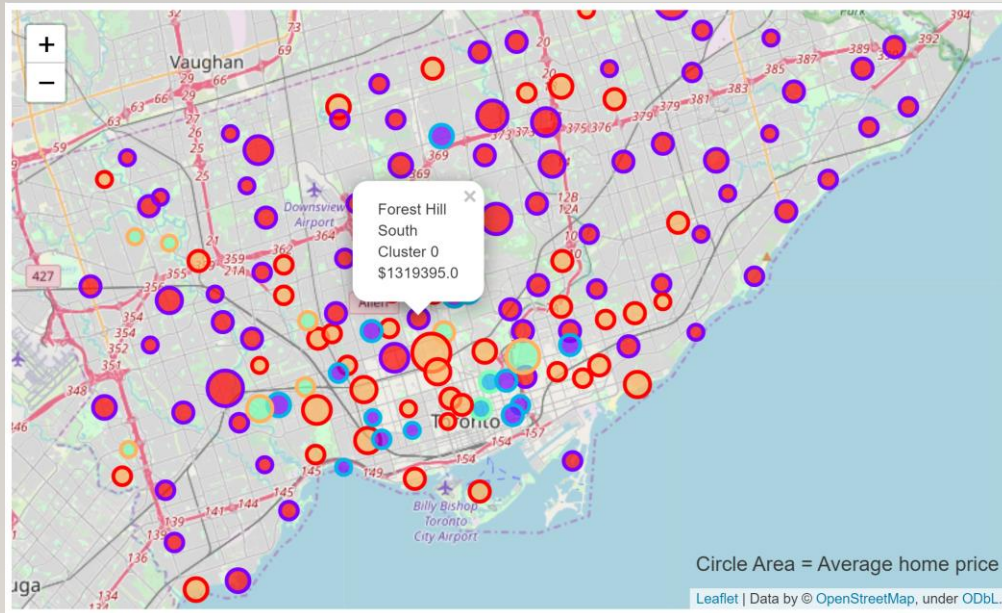
The Cluster that had Forest Hill had 11 neighoubrhood that were within my budget (< $800,000), and I chose 6 out of those neighbourhoods because they had an average normalized crime rate of less than 4.

HOME PRICE < $800,000
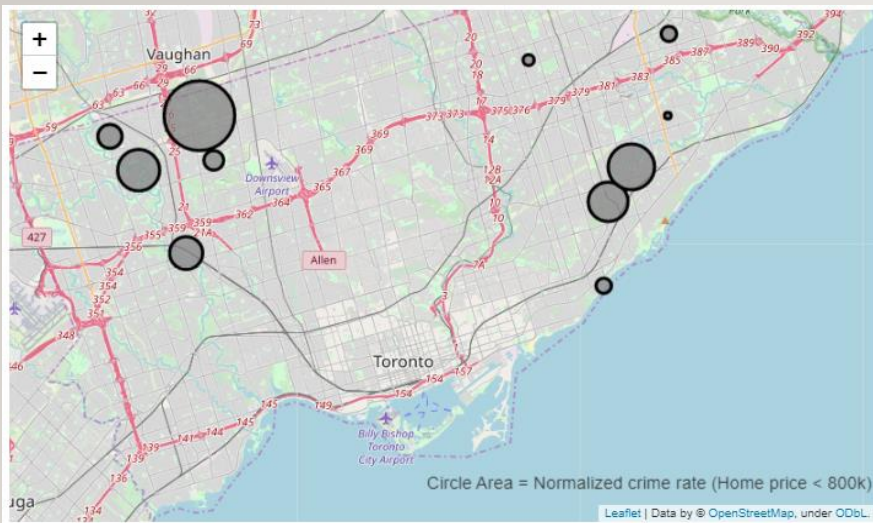
CRIME RATE < 4

The short list of Neighbourhoods in Toronto where I will be looking for my new home

	Neighbourhood	Population_Density	Average Crime	Average home price (2017)	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
19	Humber Summit	1.780867	2.251131	706722.0	Coffee Shop	Bank	Park	Asian Restaurant	Hardware Store
34	Glenfield-Jane Heights	5.074424	1.547167	745701.0	Pizza Place	Grocery Store	Vietnamese Restaurant	Fast Food Restaurant	Coffee Shop
83	L'Amoreaux	4.154920	0.529240	784794.0	Fast Food Restaurant	Chinese Restaurant	Coffee Shop	Pharmacy	Sandwich Place
89	Birchcliffe-Cliffside	4.332918	0.846891	725980.0	Coffee Shop	Thai Restaurant	Golf Course	Liquor Store	Beer Store
111	Woburn	2.830533	0.206713	746787.0	Fast Food Restaurant	Coffee Shop	Chinese Restaurant	Pizza Place	Bank
122	Malvern	4.042411	0.872694	692097.0	Fast Food Restaurant	Pharmacy	Pizza Place	Grocery Store	Sandwich Place

Thank you for your attention!