



# Best Business Opportunities based on Neighbourhood analysis

DANILO DE OLIVEIRA ALVES  
IBM – APPLIED DATA SCIENCE  
11/10/2020

# Introduction

- ▶ This project uses the data about the city of Toronto, ON, Canada, analyzing the neighborhoods and the most common business in it.



# Business Problem.

- ▶ Open a business is very challenging, no matter which activity you choose, the smallest details can be key to success or completely failure.
- ▶ a good way to prevent it to fail is to do some research about the factors that can be a differential, such as competition, which is going to be the focus of this project.

# Data Description

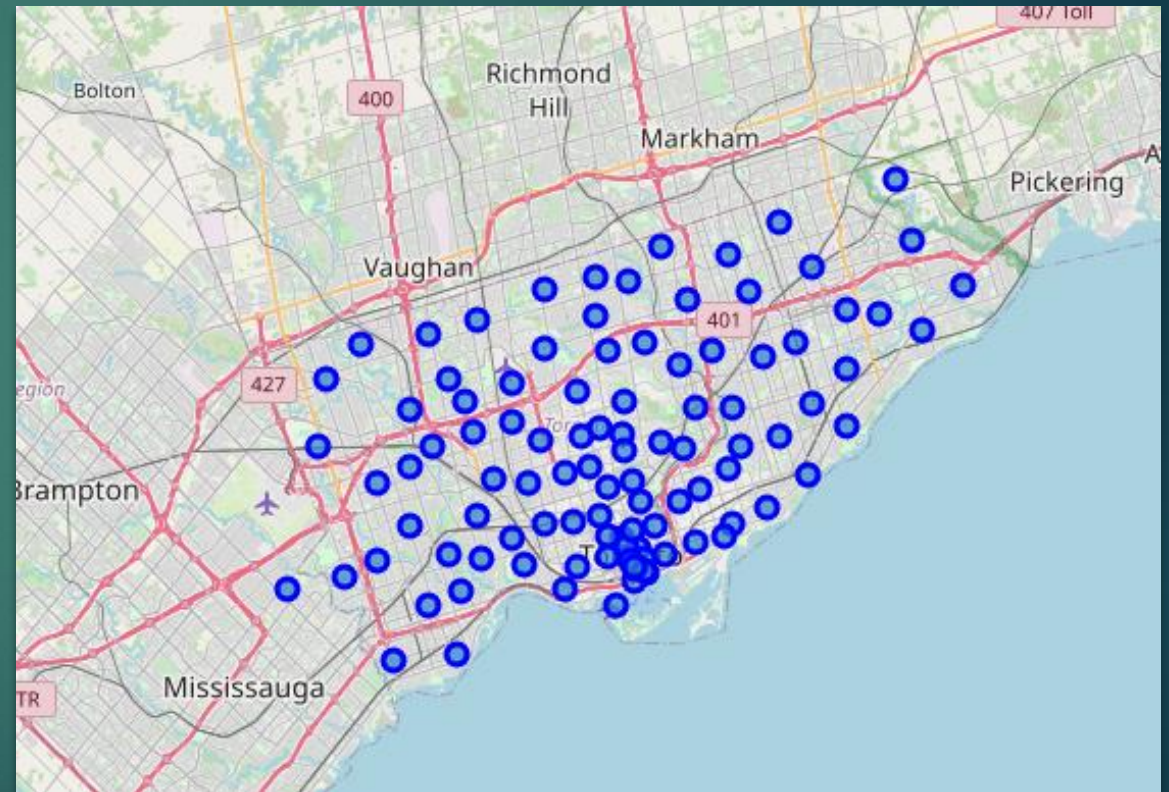
- ▶ The data contains information's about all kind of business and places such as Coffee Shop, Clothing Store, Yoga Studio, Japanese Restaurant, Mexican Restaurant, Gym, Cocktail Bar, Jazz Club, among other things, in each neighborhood.

	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue Name	Venue Category	Venue Latitude	Venue Longitude
0	Parkwoods	43.753259	-79.329656	Allwyn's Bakery	Caribbean Restaurant	43.759840	-79.324719
1	Parkwoods	43.753259	-79.329656	Brookbanks Park	Park	43.751976	-79.332140
2	Parkwoods	43.753259	-79.329656	Tim Hortons	Café	43.760668	-79.326368
3	Parkwoods	43.753259	-79.329656	Bruno's valu-mart	Grocery Store	43.746143	-79.324630
4	Parkwoods	43.753259	-79.329656	A&W	Fast Food Restaurant	43.760643	-79.326865
5	Parkwoods	43.753259	-79.329656	Shoppers Drug Mart	Pharmacy	43.760857	-79.324961
6	Parkwoods	43.753259	-79.329656	Food Basics	Supermarket	43.760549	-79.326045
7	Parkwoods	43.753259	-79.329656	Shoppers Drug Mart	Pharmacy	43.745315	-79.325800
8	Parkwoods	43.753259	-79.329656	High Street Fish & Chips	Fish & Chips Shop	43.745260	-79.324949
9	Parkwoods	43.753259	-79.329656	Pizza Pizza	Pizza Place	43.760231	-79.325666
10	Parkwoods	43.753259	-79.329656	Variety Store	Food & Drink Shop	43.751974	-79.333114
11	Parkwoods	43.753259	-79.329656	DVP at York Mills	Intersection	43.758899	-79.334099
12	Parkwoods	43.753259	-79.329656	TTC Stop #09083	Bus Stop	43.759655	-79.332223
13	Parkwoods	43.753259	-79.329656	TTC Stop 9083	Bus Stop	43.759251	-79.334000
14	Parkwoods	43.753259	-79.329656	Sandover Park	Park	43.760277	-79.333305
15	Parkwoods	43.753259	-79.329656	TTC Stop #9075	Train Station	43.757596	-79.338155
16	Parkwoods	43.753259	-79.329656	Dollarama	Discount Store	43.760341	-79.325519
17	Parkwoods	43.753259	-79.329656	Parkwoods Coin Laundry	Laundry Service	43.760386	-79.324894
18	Parkwoods	43.753259	-79.329656	Spicy Chicken House	Chinese Restaurant	43.760639	-79.325671
19	Parkwoods	43.753259	-79.329656	La Notre	Coffee Shop	43.760704	-79.325396



# Methodology

- ▶ A Geolocator API was used to map all the neighborhoods in Toronto, represented with a blue dot in the map.



# Methodology

- ▶ The Foursquare API was responsible to provide the data about the venues in the city of Toronto, ON, Canada.
- ▶ It consist of the following fields
  - ▶ Neighborhoods
  - ▶ Venues name and category
  - ▶ Respective latitude and longitude

# Methodology

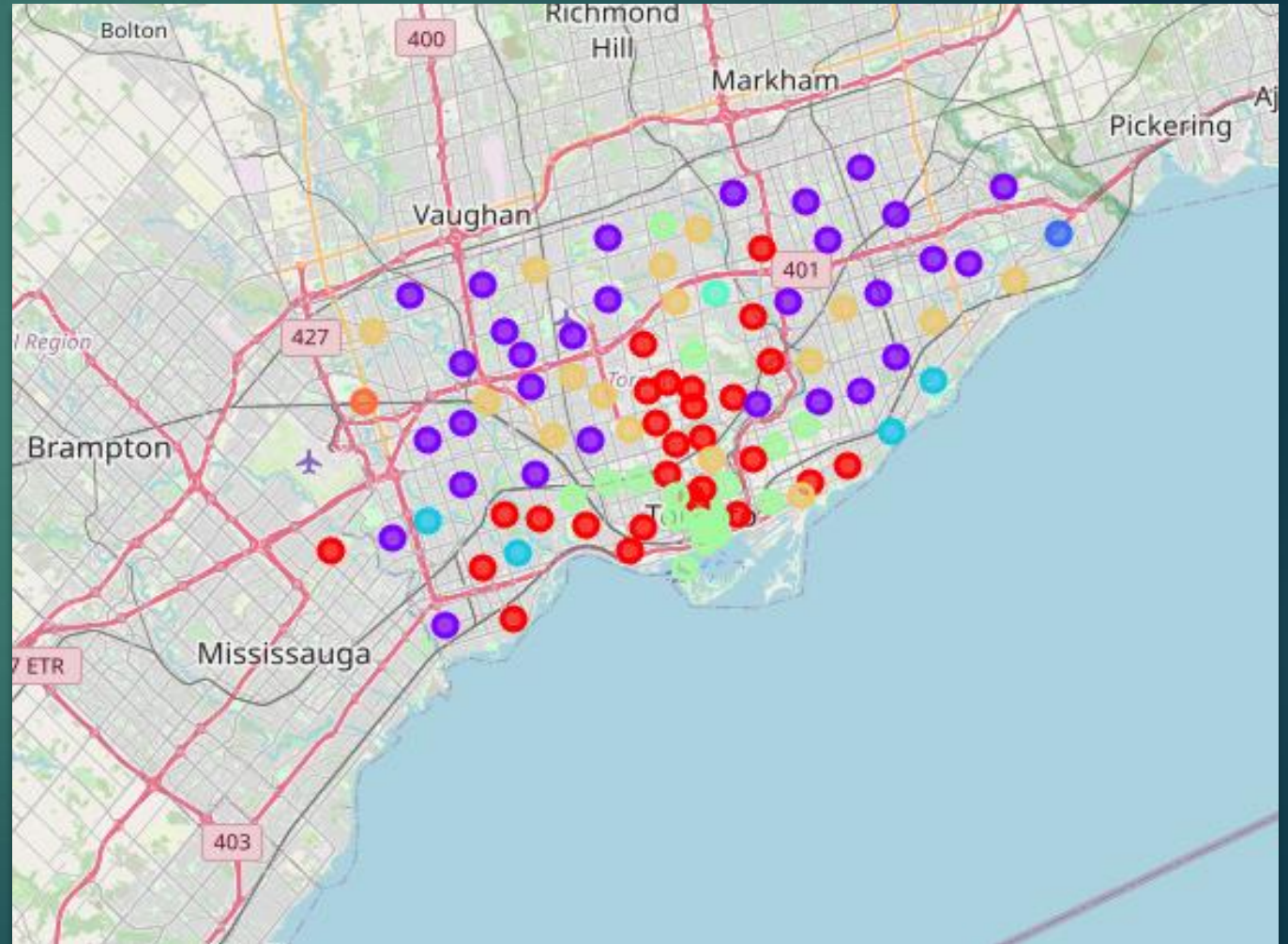


- ▶ A technique called Web Scraping was used to get the data from the Wikipedia website, getting all the information available on Toronto's neighborhoods.
- ▶ Then a Machine Learning algorithm called "Clustering" was used to cluster and segment those neighborhoods, this will help to find the best business opportunity in each one of them.



# Results

- Neighborhoods filtered by cluster





# Results

	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
2	Regent Park, Harbourfront	Coffee Shop	Bakery	Park	Performing Arts Venue	Theater	Mediterranean Restaurant	Breakfast Spot	Spa	Liquor Store	Café
4	Queen's Park, Ontario Provincial Government	Coffee Shop	Park	Yoga Studio	Gastropub	Ramen Restaurant	Portuguese Restaurant	Museum	Middle Eastern Restaurant	Mexican Restaurant	Italian Restaurant
7	Don Mills	Restaurant	Japanese Restaurant	Gym	Bank	Burger Joint	Coffee Shop	Supermarket	Beer Store	Pizza Place	Asian Restaurant
13	Don Mills	Restaurant	Japanese Restaurant	Gym	Bank	Burger Joint	Coffee Shop	Supermarket	Beer Store	Pizza Place	Asian Restaurant
19	The Beaches	Park	Beach	Japanese Restaurant	Breakfast Spot	Pub	Bagel Shop	Gastropub	Bar	Bakery	Mediterranean Restaurant
23	Leaside	Sporting Goods Shop	Coffee Shop	Burger Joint	Sandwich Place	Auto Dealership	Sports Bar	Restaurant	Supermarket	Sushi Restaurant	Shopping Mall
24	Central Bay Street	Coffee Shop	Café	Italian Restaurant	Yoga Studio	Gastropub	Park	Middle Eastern Restaurant	Miscellaneous Shop	Seafood Restaurant	Modern European Restaurant

# Discussion

- ▶ After analyze the results we can conclude that:
  - ▶ Dry Cleaner, Greek restaurant, Latin American restaurant are one of the less common business
  - ▶ Neighborhoods like York Mills, Silver Hills, Northwest, West Humber - Clairville, Northwood Park, York University, Lawrence Manor, Lawrence Heights seems to lack this kind of business.

# Conclusion

- ▶ As shown in this project Data analysis and machine learning techniques provide some useful insights providing the best results.
- ▶ After the analysis and the results, chances of success increases since one of the step are fulfilled: The right type of business

