

Applied Data Science Capstone



Opening a new Bookstore in Toronto, Canada

By Riyadh Bin Rafiq

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Business Problem

- The location of the bookstore is one of the most important decisions that will determine whether the bookstore will be a success or failure.
- If an investor wants to open a new bookstore in Toronto city, what would be the best place that you recommend to open?



Data

- List of neighborhoods in Toronto.
- Latitude and longitude coordinates of those neighborhoods.
- Venue data specially bookstores are used to perform clustering.
- Wikipedia page:

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M



Methodology

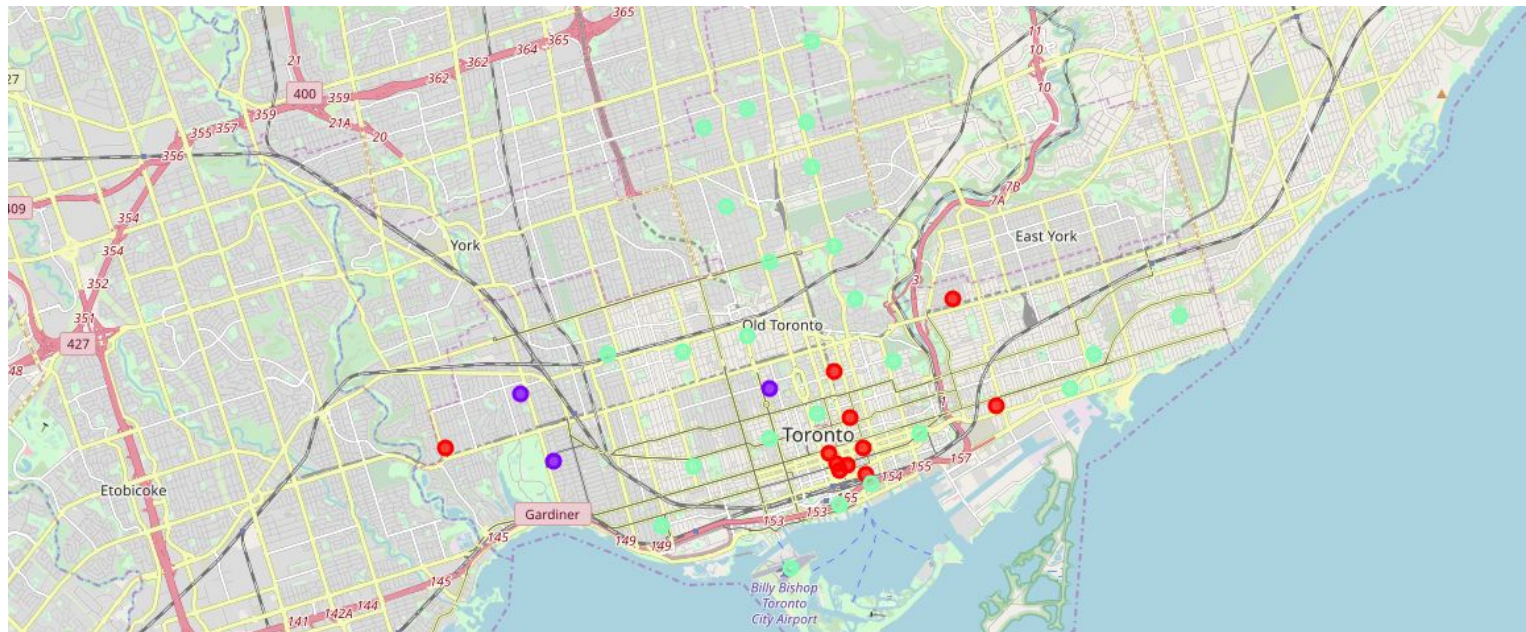
- Web scraping
- Geographical coordinates in the form of latitude and longitude
- Using Foursquare API to get the 100 venues within radius of 500 meters
- Prepared data is stored all together in Pandas dataframe
- Machine learning algorithm K-means clustering is used to cluster the neighborhoods of Toronto city



Results

- Cluster 1: Neighborhoods with moderate number of bookstores.
- Cluster 2: Neighborhoods with higher number of bookstores.
- Cluster 3: Neighborhoods with no existence of bookstores.

Results(Cont'd)





Results(Cont'd)

In map visualization, red color indicates cluster 1, purple and green color specifies cluster 2 and cluster 3 respectively.



Discussion

- Cluster 1 and cluster 2 contain bookstores.
- Cluster 3 contains neighborhoods with no bookstores. So these are the high potential places to open a new bookstore as there will be no competition.
- Investors or book lovers are advised to avoid neighbourhoods in cluster 2 which are high concentrated area of bookstores and suffering from intense competition.
- I consider one factor, frequency of occurrence of bookstores in this project.



Conclusion

- A business problem has been identified.
- The processes of data cleaning, data wrangling and sources of the specified data has been detailed to prepare data.
- K-means clustering has been executed to cluster the neighborhoods and recommend the opportunistic neighborhoods to open a new bookstore.



Thank You 📡