



Gym data analytics for business in Toronto, York area

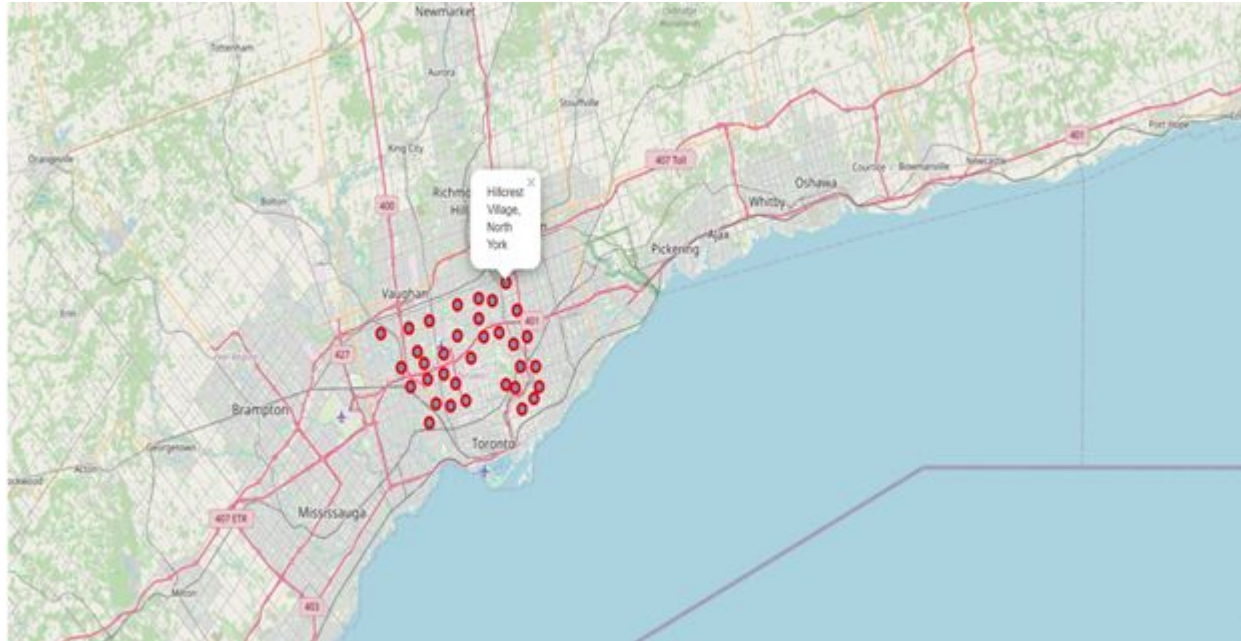
Predicting the new gym location is valuable.

- population figure for Toronto, the York Region in 2019 is 1,191,400
- It is constantly growing for the last several years averaging 1.9 percent per year since 2011
- there are not enough gyms in that region

Data acquisition and cleaning

- list of postal codes, [Wikipedia data source](#)
- latitude and longitude of each neighbourhood, [Latitude and Longitude](#)
- Cleaned data contains 103 rows and 5 features
- York area contains 34 rows and 5 features

Geospatial visual analysis



Neighbourhoods exploration

- 336 venues with 120 unique categories within a 500-meter radius
- Check to verify it contains Gym venue
- Calculate mean for each venue

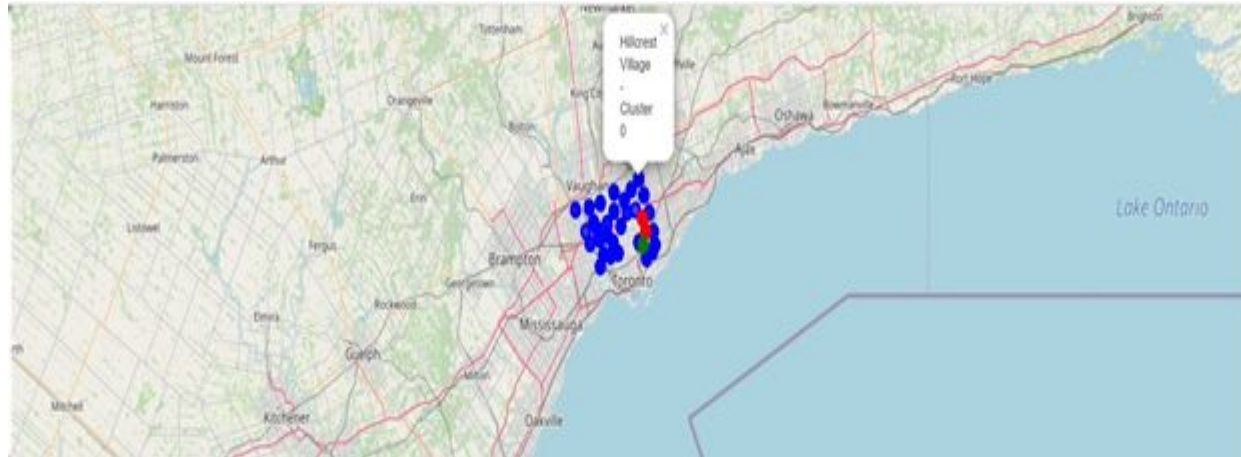
Cluster Neighborhoods

- Unsupervised machine learning algorithm
- Clustering method by using k-means clustering
- Cluster York area neighbourhoods into three clusters

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Clusters map



Conclusion and future direction

- Parkview Hill, Woodbine Gardens might be a good location to open a gym
- only one factor, existence, was taken into consideration
- future research should take into consideration additional factors