

The Battle of the Neighborhoods: Starting a Brazilian Jiu Jitsu Gym

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QUESTION:

Best location
for a BJJ
gym in the
Greater
Toronto Area
(GTA)?

- Brazilian Jiu Jitsu (BJJ) is growing in popularity thanks to the rise of the Ultimate Fighting Championship (UFC) and the sport of mixed martial arts (MMA)
- Optimizing location gives gyms the best chance to thrive as a business and grow a strong BJJ community



<https://themmaguru.com/best-jiu-jitsu-gyms-in-the-world/>

Data Collection & Preparation

Collection:

Data collected using Foursquare API:

1. Martial arts dojos in the GTA with 'BJJ', 'Brazilian Jiu Jitsu', or 'MMA' in their name
 - Gyms <40 km from Toronto
2. All venues <1 km from the dojos



Preparation:

- Kept only gyms/venues with complete information (venue type, address, latitude, longitude etc)
- Removed duplicates, unnecessary attributes
- Final datasets:
 - Gym data set: 17 rows, 10 columns
 - Venues data set: 2678 rows, 8 columns

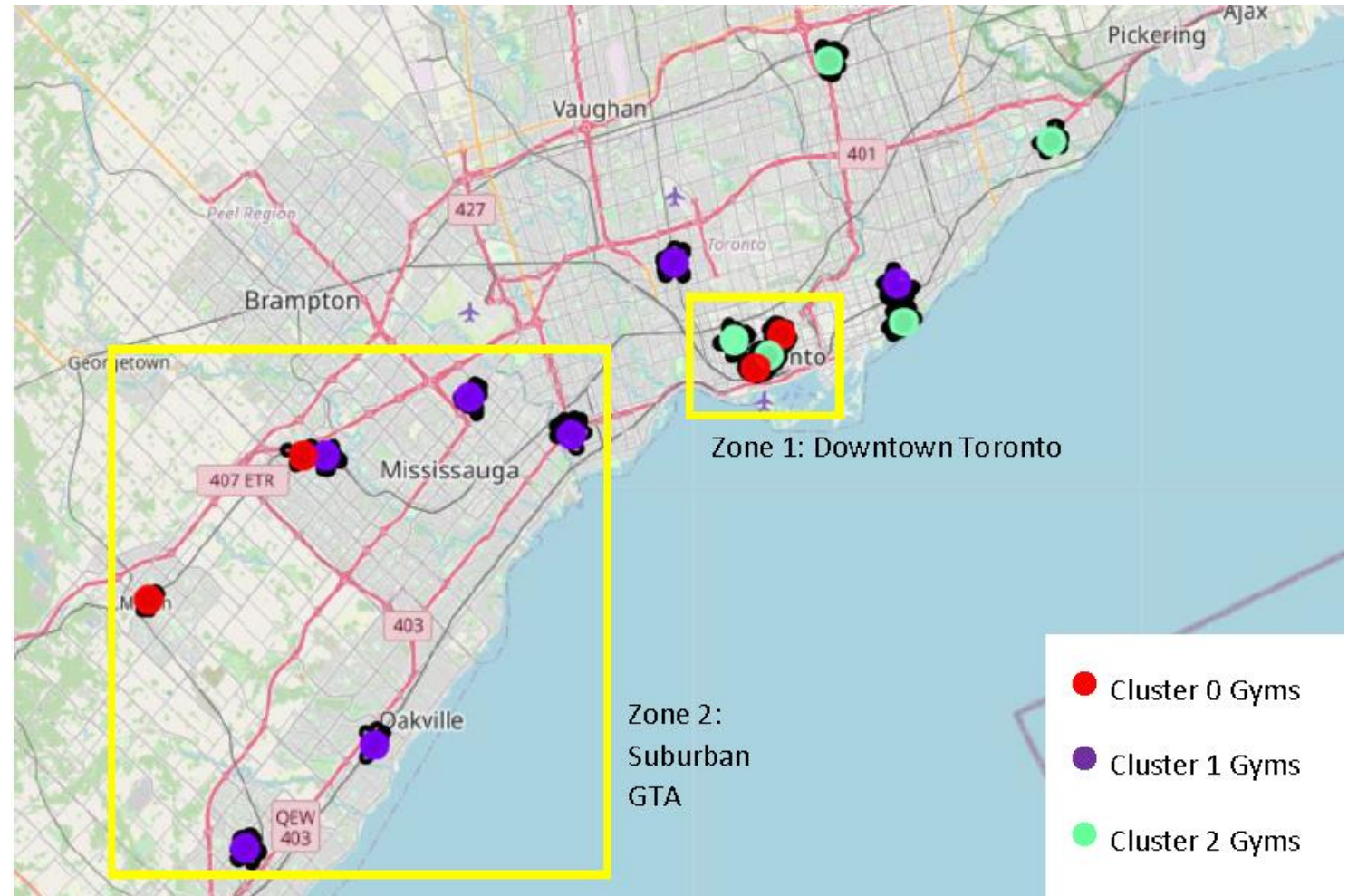


Results:

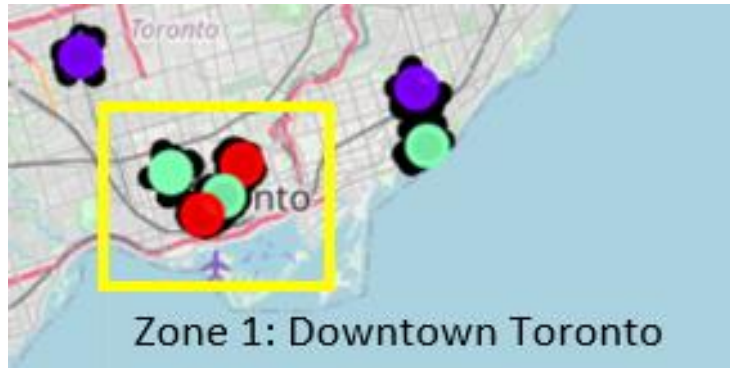
WHAT TRENDS DID WE FIND IN WHERE BJJ GYMS TEND TO BE LOCATED?

Clustering with k -Means:

- $k = 3$
- Clustered gyms based on types of venues nearby the BJJ gyms



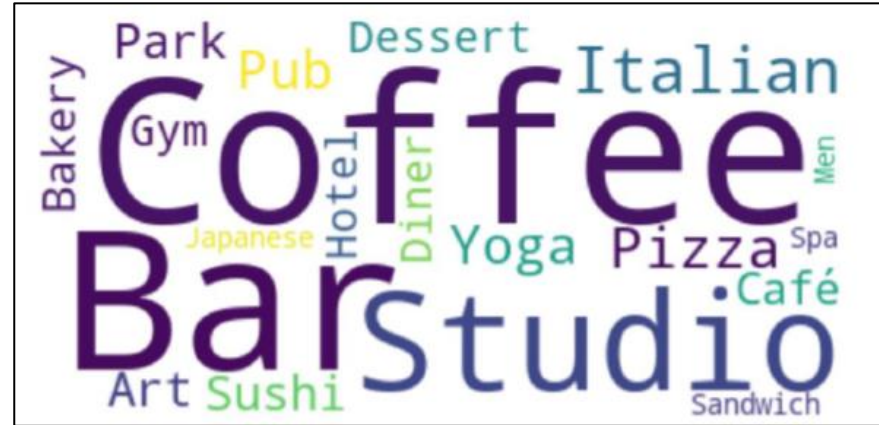
Downtown vs Suburban Regions



- Only Clusters 0 & 2 appear downtown



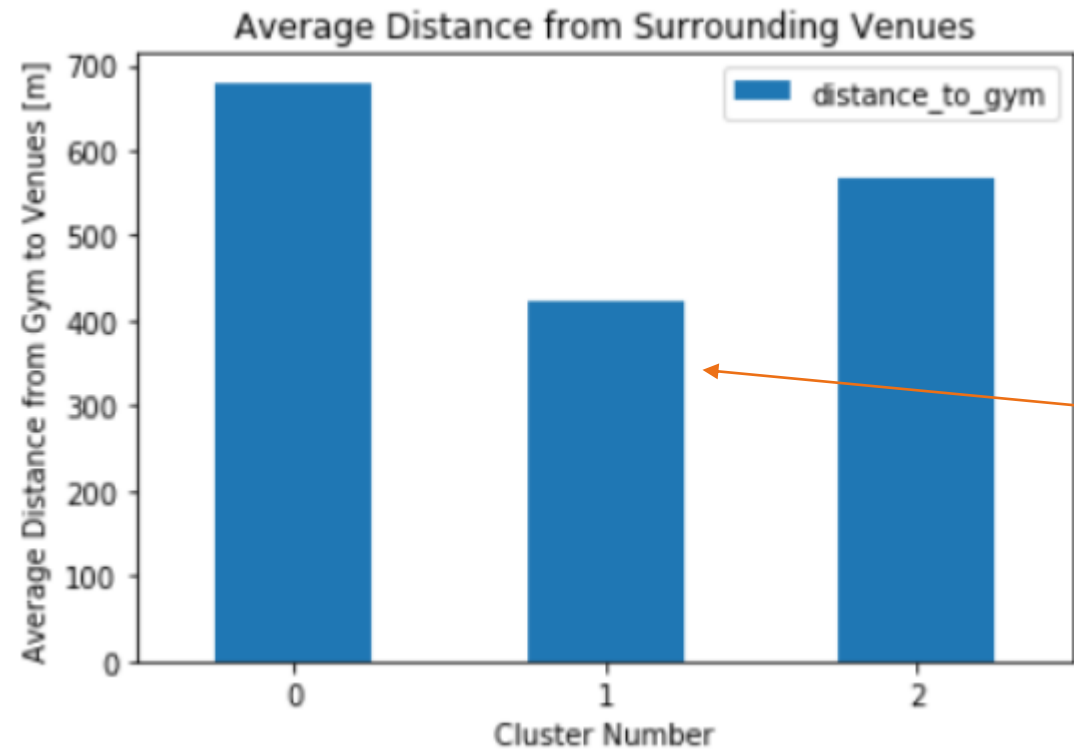
- Cluster 1 tends to appear predominantly in suburban areas



Text Analysis of Nearby Venues for each Cluster:

- >100 unique venue categories makes traditional data visualization (ie. histograms) difficult
 - Word clouds used instead

Average Distance from Gyms to Venues by Cluster:



Cluster 1 gyms are closer to their surrounding venues. This could be because they are in suburban strip malls, where store density is high.

Conclusion

Gyms downtown should be:

- Close to restaurants, coffee shops and bars
- Close to public transportation

Gyms in suburban areas should be:

- In strip malls or similar complexes
- Near other recreational fitness facilities (ie. yoga studios, weightlifting gyms)

Recommendations for Improvement:

- Develop more quantitative models to evaluate strength of relationships between gyms and certain venue types
- Group large number of unique category labels into more general bins (ie. food, retail, transportation)
 - This will make data easier to quantify with numerical modelling methods