



A TALE OF TWO CITIES

San Francisco vs Toronto

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CUISINE AND CULTURE

- Cuisine and culture can be often the most exciting aspects of a city, so they can definitely be deciding factors for a city's livability.
- In this study, we will quantify how similar both cities are in the aforementioned terms.
- The results of the comparison will be useful to anyone who needs more information on deciding to possibly move to either of these cities.

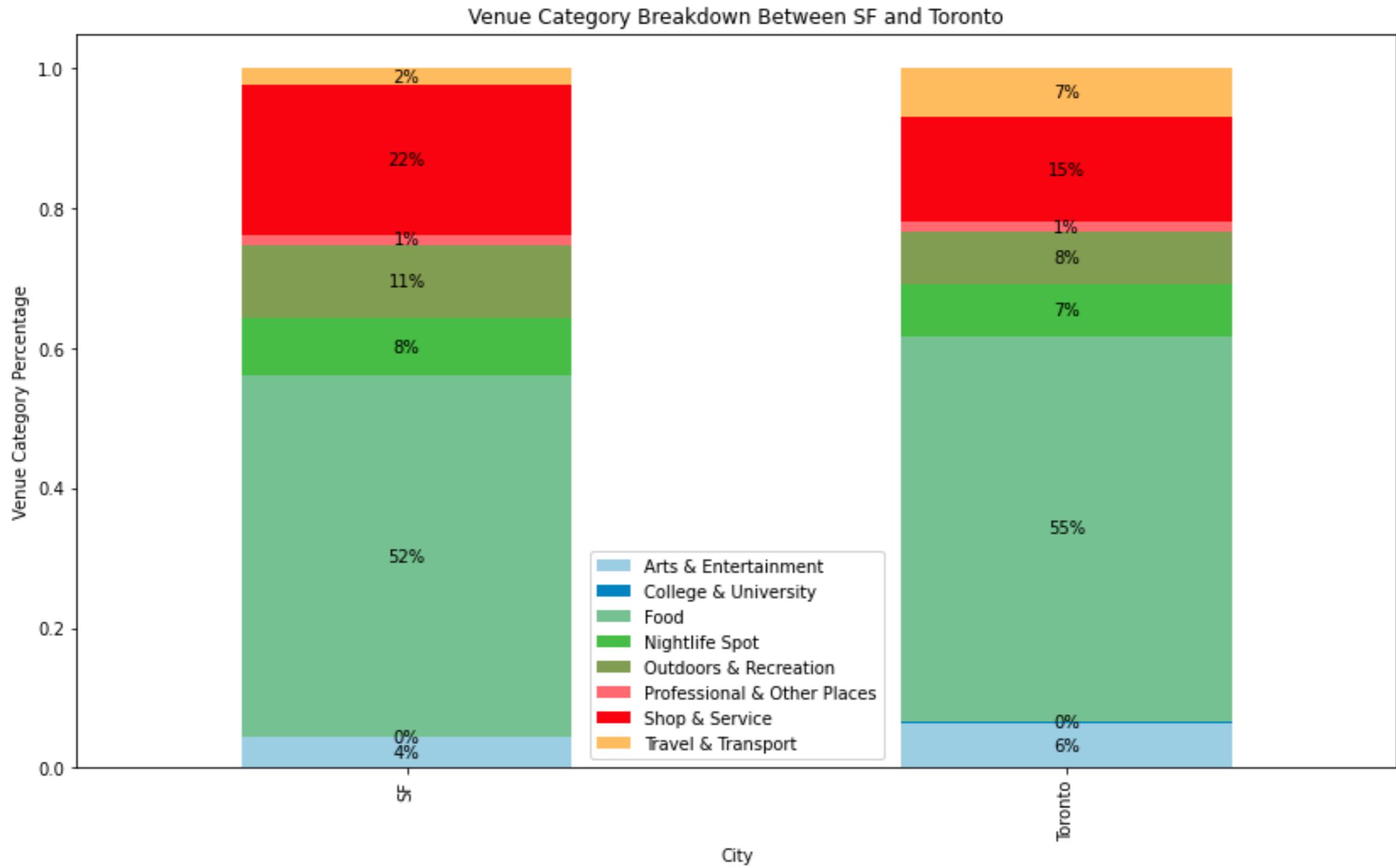
Datasets

- San Francisco neighborhood data with latitude and longitude coordinates
- Toronto neighborhood data with latitude and longitude coordinates
- Foursquare location data for venues

Methodology

- Exploratory data analysis will initially be used to profile our Foursquare neighborhood/venue breakdown.
- Stacked bar charts will then be used to compare the venue parent category distribution in each city.
- Since there are so many unknown variables, the K-Means clustering algorithm is ideal for identifying similar neighborhoods from the combined city dataset.
- Folium maps will then be used to display the cross-city venue clusters.

VENUE DISTRIBUTION



FOURSQUARE DATA FOR CLUSTERING

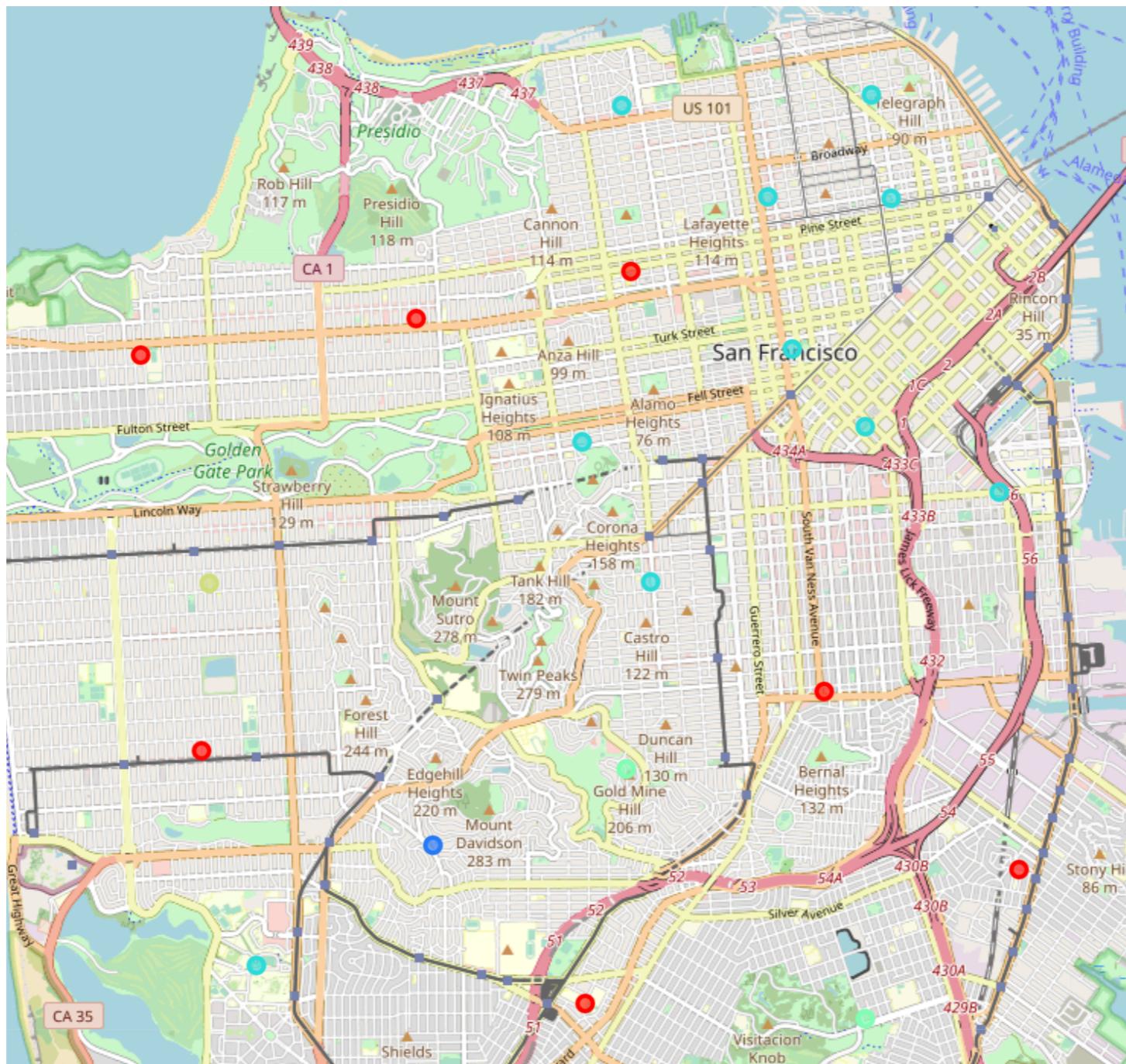
- We will only examine the top ten for each neighborhood for the purposes of clustering.
Below is the top 10 categories of the first 5 neighborhoods.

City	Neighborhood	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
SF	Bayview-Hunters Point	Southern / Soul Food Restaurant	Coffee Shop	Mexican Restaurant	Bakery	Café	Taco Place	African Restaurant	Park	Gym	Pharmacy
SF	Castro/Noe Valley	Gay Bar	Thai Restaurant	Coffee Shop	Scenic Lookout	Yoga Studio	Indian Restaurant	Cosmetics Shop	Pizza Place	Playground	Plaza
SF	Chinatown	Coffee Shop	Bakery	Chinese Restaurant	Hotel	Men's Store	Cocktail Bar	Bubble Tea Shop	Dim Sum Restaurant	Church	Szechuan Restaurant
SF	Haight-Ashbury	Coffee Shop	Pizza Place	Park	Boutique	Thrift / Vintage Store	Bakery	Gastropub	Jazz Club	Bookstore	Gym
SF	Hayes Valley/Tenderloin/North ...	Café	Hotel	Coffee Shop	Mexican Restaurant	Wine Bar	French Restaurant	Theater	Cocktail Bar	Performing Arts Venue	Sushi Restaurant

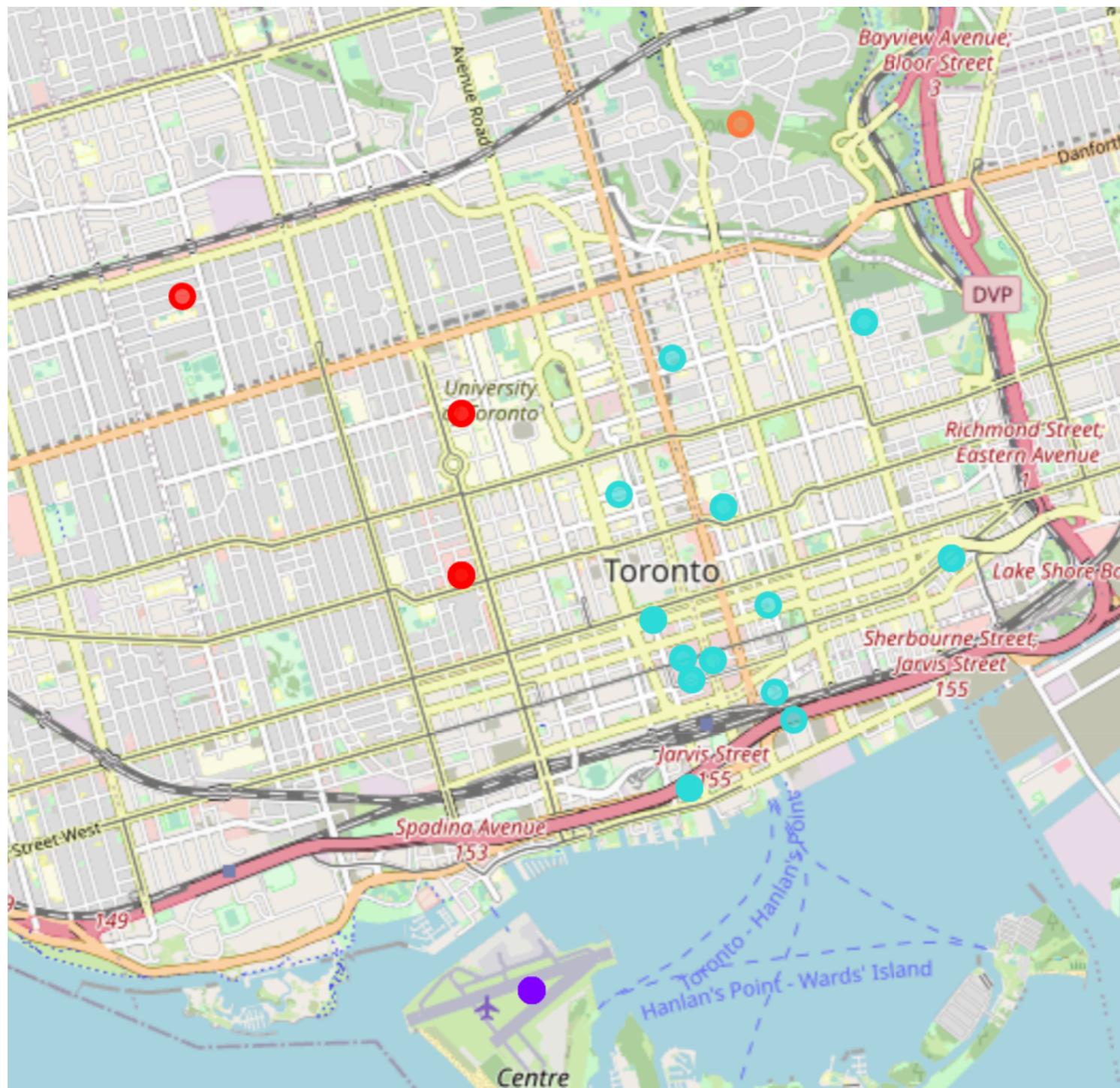
K-MEANS CLUSTERING

The K-Means clustering machine learning algorithm will be used to cluster all the neighborhoods into 7 clusters. The clustering results will be mapped out, with the clusters across both cities sharing the same color.

SAN FRANCISCO CLUSTER

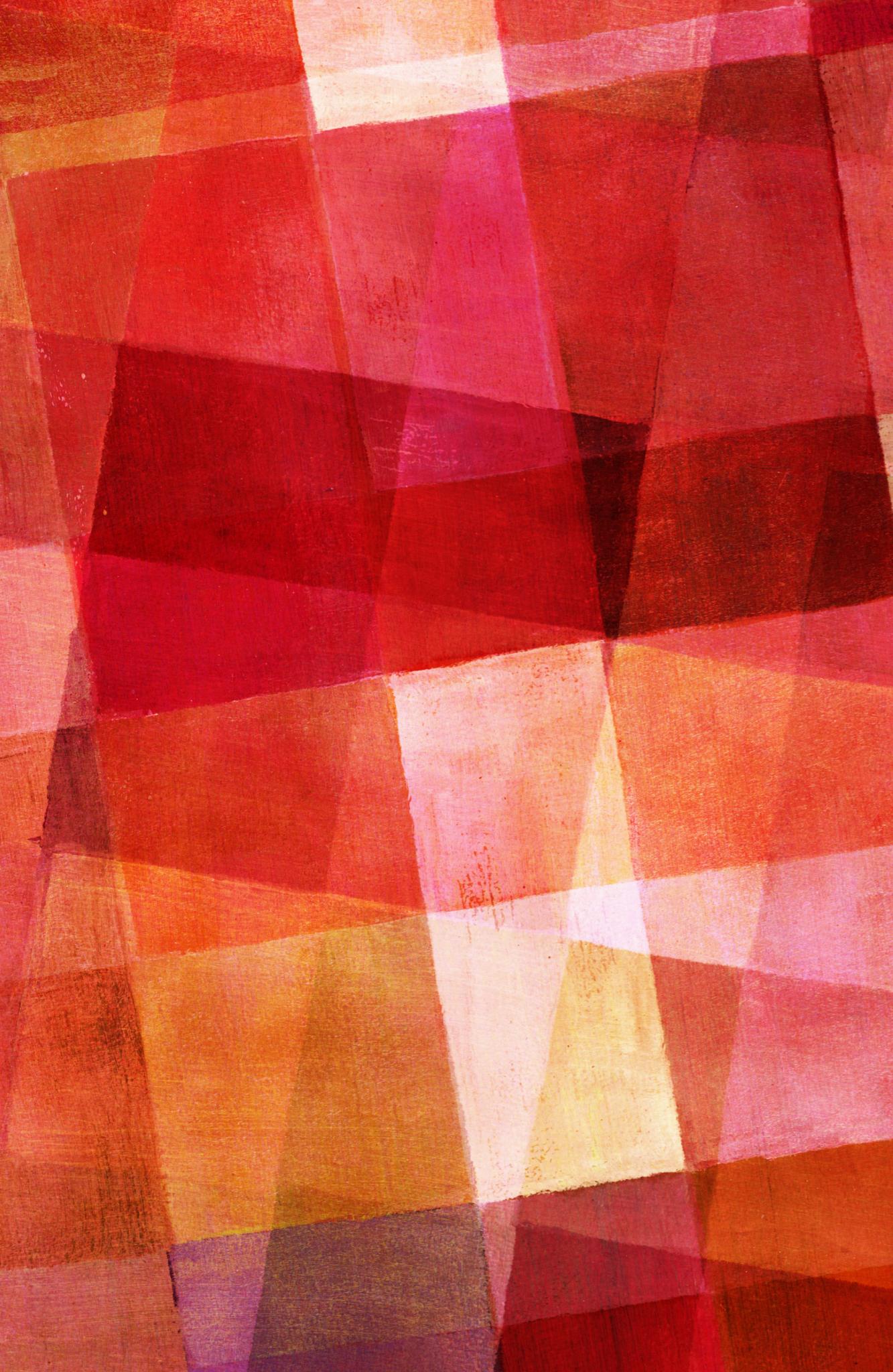


TORONTO CLUSTER



Results

- Both cities are very similar in their distribution, with Toronto slightly edging out SF in food (55% vs 52%) and arts & entertainment (6% vs 4%).
- From the maps above, the red colored clusters are associated with a higher density of international restaurants. In SF, they are mainly distributed well outside of downtown, where in Toronto, they are clustered near the University of Toronto.
- Since the Foursquare data is heavily skewed toward restaurants, the cultural attractions data in the top ten breakdown was sparse. However, there was a noticeable theater presence in the light blue clusters, which were located near the downtown areas of both cities.



CONCLUSION

- The purpose of this study was to compare San Francisco and Toronto on the basis on their international cuisine and arts & cultural attractions.
- Based on the findings, one can conclude that both cities equally have lots to offer, with Toronto offering slightly more in a comparatively smaller area of the city.