

CAPSTONE PROJECT

NEIGHBORHOOD SIMILARITIES

PA MBI

PROBLEM DESCRIPTION

A CUSTOMER LEAVING IN RONCESVALLES VILLAGE, TORONTO (CANADA), HAS JUST FOUND A NEW JOB THAT WOULD REQUIRE LOCATION TO NEW YORK.

HER REQUEST IS TO FIND AN SUITABLE NEIGHBOURHOOD IN NEW YORK THAT BEAR THE SAME SIMILARITY AS HER CURRENT ONE,

SO THAT SHE DOES NOT FEEL OUT THE PLACE ONCE SHE MOVED IN. HER CURRENT NEIGHBOURHOOD, RONCESVALLES VILLAGE, IS PREDOMINANTLY RESIDENTIAL, WITH A COMMERCIAL STRIP THE FULL LENGTH OF RONCESVALLES, COMPOSED PREDOMINANTLY OF SMALL BUSINESSES, CHURCHES AND INSTITUTIONS.

CULTURALLY, THE AREA IS KNOWN AS THE CENTRE OF THE POLISH COMMUNITY IN TORONTO WITH PROMINENT POLISH INSTITUTIONS, BUSINESSES AND ST CASIMIR'S CATHOLIC CHURCH LOCATED ON RONCESVALLES AVENUE. RONCESVALLES VILLAGE'S GEOLOCATION COORDINATES ARE: LATITUDE 43.646231 AND LONGITUDE: -79.449048.

DATA SOURCE

THE SOURCE OF DATA USED IN THIS PROJECT WILL ORIGINATE FROM THE FOURSQUARE LOCATION DATA ([HTTPS://FOURSQUARE.COM/](https://foursquare.com/)).

FOURSQUARE IS A LOCAL SEARCH-AND-DISCOVERY THAT PROVIDES PERSONALIZED RECOMMENDATIONS OF PLACES TO GO NEAR A USER'S CURRENT LOCATION BASED ON USERS' PREVIOUS BROWSING HISTORY AND CHECK-IN HISTORY. THE FOURSQUARE WILL ALLOW US THE FIND PLACES THAT HAVE SIMILAR CATEGORIES IN NEW YORK AS THE ONES IN RONCESVALLES VILLAGE.

APPROACH

- FIND SIMILARITIES BETWEEN RONCESVALLES AND NEW YORK, BASED ON COMMON NEIGHBORHOOD VENUES
- USE DATA CLUSTERING TO CATEGORIZE NEW YORK NEIGHBORHOODS
- PREDICT NEW YORK NEIGHBORHOODS SIMILAR TO RONCESVALLES

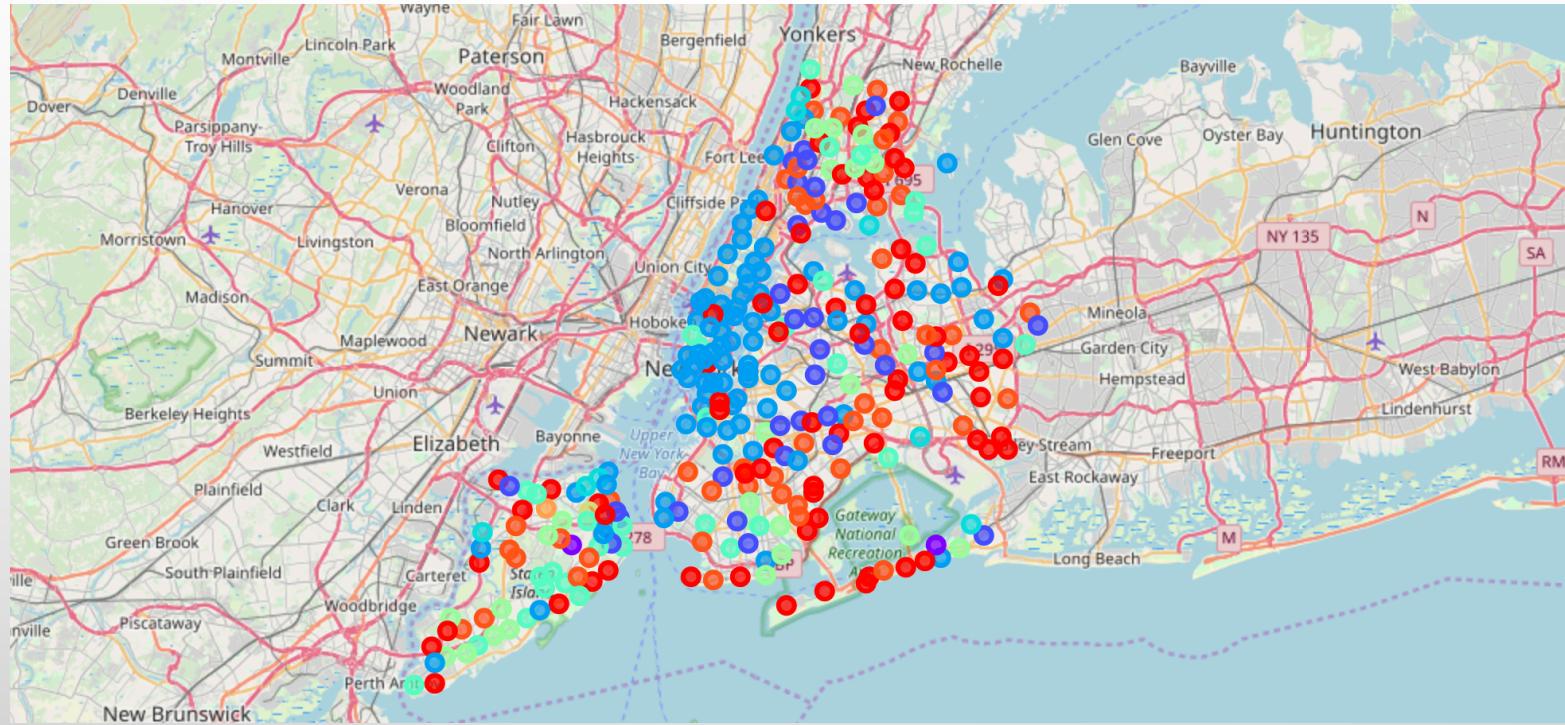
RONCESVALLES DATA

	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
0	Roncesvalles	Coffee Shop	Bakery	Eastern European Restaurant	American Restaurant	Clothing Store	Convenience Store	Thai Restaurant	Bookstore	Sushi Restaurant	Butcher

NEW YORK DATA

	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
0	Allerton	Pizza Place	Dessert Shop	Pharmacy	Breakfast Spot	Toy / Game Store	Clothing Store	Fish Market	Eastern European Restaurant	Convenience Store	Coffee Shop
1	Annadale	Pizza Place	Bakery	American Restaurant	Sushi Restaurant	Sports Bar	Park	Clothing Store	Eastern European Restaurant	Dessert Shop	Convenience Store
2	Arden Heights	Pizza Place	Pharmacy	Coffee Shop	Toy / Game Store	Clothing Store	Fish Market	Eastern European Restaurant	Dessert Shop	Convenience Store	Butcher
3	Arlington	Grocery Store	Toy / Game Store	Food & Drink Shop	BBQ Joint	Bakery	Bookstore	Breakfast Spot	Butcher	Café	Clothing Store
4	Arrochar	Italian Restaurant	Pizza Place	Toy / Game Store	Clothing Store	Fish Market	Eastern European Restaurant	Dessert Shop	Convenience Store	Coffee Shop	Café

NEW YORK CLUSTERS



SIMILAR NEIGHBORHOODS TO RONCESVALLES

	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	American Restaurant	BBQ Joint	Bakery	Bookstore	Breakfast Spot	Butcher	Café	Clothing Store	Coffee Shop	Convenience
6	Manhattan	Marble Hill	40.876551	-73.910660	3.0	0.040000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.040000	0.080000	0.000000
12	Bronx	City Island	40.847247	-73.786488	3.0	0.040000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
46	Brooklyn	Bay Ridge	40.625801	-74.030621	3.0	0.035294	0.000000	0.000000	0.011765	0.011765	0.000000	0.000000	0.011765	0.023529	0.000000
49	Brooklyn	Greenpoint	40.730201	-73.954241	3.0	0.010000	0.000000	0.020000	0.010000	0.000000	0.000000	0.030000	0.000000	0.060000	0.000000
52	Brooklyn	Sheepshead Bay	40.586890	-73.943186	3.0	0.043478	0.000000	0.000000	0.000000	0.000000	0.000000	0.043478	0.000000	0.000000	0.000000
58	Brooklyn	Windsor Terrace	40.656946	-73.980073	3.0	0.037037	0.000000	0.000000	0.037037	0.000000	0.037037	0.074074	0.000000	0.037037	0.000000
59	Brooklyn	Prospect Heights	40.676822	-73.964859	3.0	0.025974	0.000000	0.025974	0.000000	0.012987	0.000000	0.038961	0.012987	0.025974	0.000000
61	Brooklyn	Williamsburg	40.707144	-73.958115	3.0	0.000000	0.000000	0.000000	0.000000	0.029412	0.000000	0.029412	0.029412	0.088235	0.000000
62	Brooklyn	Bushwick	40.698116	-73.925258	3.0	0.013333	0.000000	0.040000	0.000000	0.000000	0.000000	0.013333	0.000000	0.080000	0.000000
63	Brooklyn	Bedford Stuyvesant	40.687232	-73.941785	3.0	0.000000	0.040000	0.000000	0.000000	0.000000	0.000000	0.080000	0.000000	0.080000	0.000000
64	Brooklyn	Brooklyn Heights	40.695864	-73.993782	3.0	0.020000	0.000000	0.030000	0.000000	0.000000	0.000000	0.010000	0.000000	0.010000	0.010000
65	Brooklyn	Cobble Hill	40.687920	-73.998561	3.0	0.010204	0.010204	0.020408	0.020408	0.000000	0.000000	0.000000	0.000000	0.000000	0.040816
67	Brooklyn	Red Hook	40.676253	-74.012759	3.0	0.061224	0.020408	0.020408	0.020408	0.000000	0.000000	0.020408	0.020408	0.020408	0.020408
68	Brooklyn	Gowanus	40.673931	-73.994441	3.0	0.015625	0.015625	0.000000	0.000000	0.031250	0.000000	0.015625	0.000000	0.031250	0.000000

THANK YOU