

Using Machine Learning to find locations to open an Indian Restaurant

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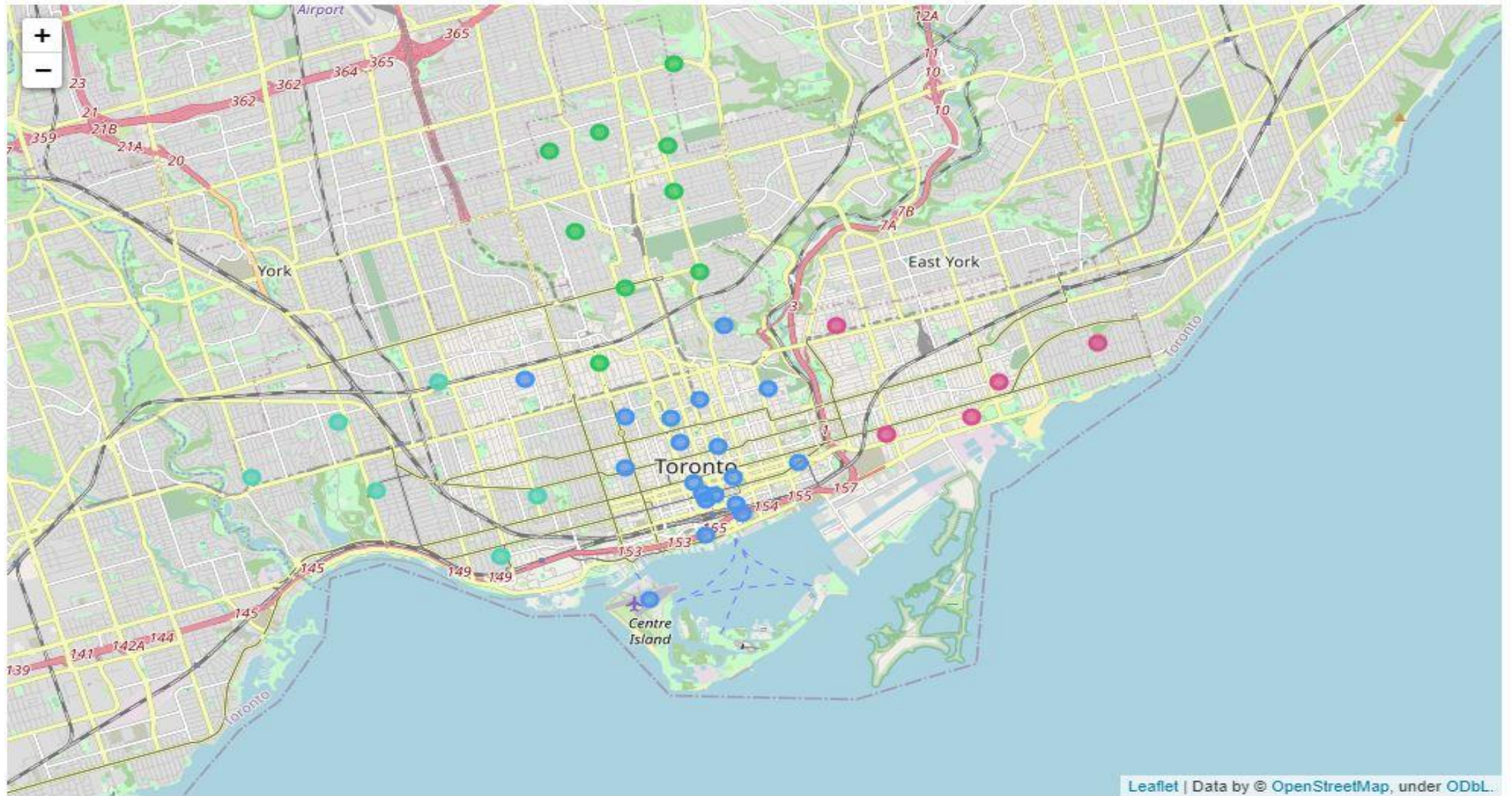
Background

- An entrepreneur is looking forward to open a Indian restaurant in Toronto
- He is interested in the locations in Toronto where he can make profit

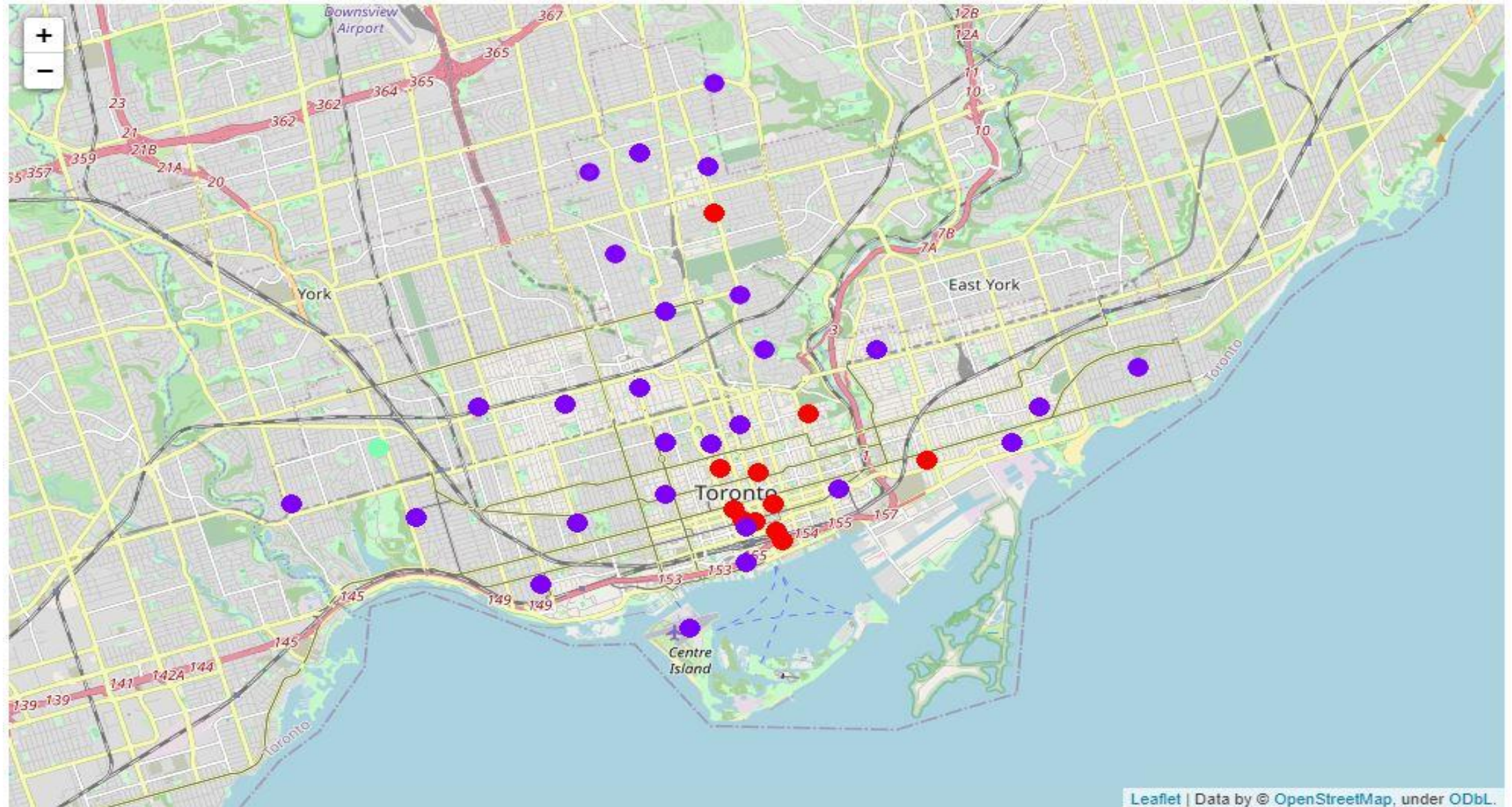
Business Problem

- Find the neighborhoods in Toronto where the number of Indian restaurants is less
 - By using clustering method on neighborhoods data got from Foursquare, this system will predict locations
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Neighborhoods in Toronto before clustering



Neighborhoods in Toronto after clustering



Neighborhoods clusters (cluster 0)

	Neighborhood	Thai Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Berczy Park	0.017241	0	43.644771	-79.373306	LCBO	43.642944	-79.372440	Liquor Store
32	Studio District	0.024390	0	43.659526	-79.340923	Avling Kitchen & Brewery	43.661515	-79.338117	Brewery
32	Studio District	0.024390	0	43.659526	-79.340923	EAT BKK Thai Kitchen	43.660450	-79.343113	Thai Restaurant
32	Studio District	0.024390	0	43.659526	-79.340923	Chez Nous	43.659640	-79.346900	Wine Bar
32	Studio District	0.024390	0	43.659526	-79.340923	Boxcar Social	43.659723	-79.346871	Café
32	Studio District	0.024390	0	43.659526	-79.340923	Starbucks	43.660742	-79.342362	Coffee Shop
32	Studio District	0.024390	0	43.659526	-79.340923	Wonder Pens	43.662809	-79.341452	Stationery Store
32	Studio District	0.024390	0	43.659526	-79.340923	eastside social	43.661289	-79.339155	Comfort Food Restaurant
32	Studio District	0.024390	0	43.659526	-79.340923	Tabule	43.659731	-79.346341	Middle Eastern Restaurant
32	Studio District	0.024390	0	43.659526	-79.340923	Purple Penguin Cafe	43.660501	-79.342565	Café

Neighborhoods clusters (cluster 1)

	Neighborhood	Thai Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Starbucks	43.650159	-79.377793	Coffee Shop
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Toronto Maple Leafs Hockey Club	43.645786	-79.379803	General Entertainment
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Druxy's	43.648015	-79.379907	Deli / Bodega
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Over Easy	43.648077	-79.377599	Breakfast Spot
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Fast Fresh Foods	43.647708	-79.379549	Salad Place
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Szechuan Express	43.646973	-79.379549	Chinese Restaurant
37	Toronto Dominion Centre, Design Exchange	0.0	1	43.647177	-79.381576	Spirit of Hockey	43.647047	-79.377537	Sporting Goods Shop

Neighborhoods clusters (cluster 2)

	Neighborhood	Thai Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	famous last words	43.665181	-79.468471	Speakeasy
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Lithuania Park	43.658667	-79.463038	Park
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	nodo	43.665303	-79.465621	Italian Restaurant
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Indie Alehouse	43.665475	-79.465290	Gastropub
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Hole in the Wall	43.665296	-79.465118	Bar
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Junction Flea	43.665258	-79.462868	Flea Market
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	ARTiculations	43.665550	-79.467194	Arts & Crafts Store
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Mjolk	43.665432	-79.467962	Furniture / Home Store
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Isaan Der	43.665311	-79.468078	Thai Restaurant
15	High Park, The Junction South	0.083333	2	43.661608	-79.464763	Junction City Music Hall	43.665334	-79.466253	Music Venue

Conclusion and future work

- Take other features from the dataset and run the clustering algorithm and analyze the data.
 - Predicted suitable locations to the entrepreneur for opening an Indian restaurant.
 - The predicted locations are the places where he can make a good profit as there are less competition.
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