

Wedding Planner Data Science Capstone Project Report

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INTRODUCTION

'Your Fairytale Wedding' is a company based in Toronto which plans larger-than-life, dream weddings for people. The wedding day is a magical one for any couple, signifying new beginnings of a beautiful future together and 'Your Fairytale Wedding' strives to make it as memorable as possible. To achieve this important task, it is required to provide its staff an exhaustive list of all the different places in a given vicinity that come into picture while organizing a wedding so that they can then proceed further, personalizing the wedding experience according to the needs and wants of their clients.

DATA DESCRIPTION

I shall be using my Foursquare Developer credentials to access Foursquare location data for this Capstone project. As we discussed in the 'Introduction' section, 'Your Fairytale Wedding' has to furnish its staff with all the details of places relevant to planning a wedding. Also, since 'Your Fairytale Wedding' believes in innovation and doing things differently, they provide their clients with the option to choose the menu for their wedding buffet from their favorite restaurants, rather than sticking to the cookie-cutter approach of a single catering service. Thus, coming back to our discussion of incorporating Foursquare API in this project, our search queries will include Bakery, bridal shops, gift shops, cosmetics and clothing stores, restaurants, hotels, banquet halls or event spaces and churches. Data wrangling or preprocessing will then be performed on these datasets followed by clustering as well as a map representation using Folium library.

METHODOLOGY

- First of all, I brainstormed all the possible search queries I would require to proceed working on this project. I also conducted a comprehensive study of different search queries on the Foursquare Endpoints link. Following this background research, I started experimenting with the same, trying to acquire a greater understanding of the Foursquare location data. I noticed the minute intricacies of Foursquare API, for instance, querying 'Cake shop' did not yield any results but querying 'Bakery' immediately generated the desired data. I experimented with different values of radii too for all the locations. After some trial and error, I found that keeping a radius of 500 meters for all the locations would be a logical thing to do. Keeping an unnecessarily large value for the radius would undermine the efficiency, not to mention how cumbersome it would be for the individual wedding planners in charge to travel all the time if the clients select a location which is too far away. Data wrangling or preprocessing formed a pivotal part of my project. I transformed all the information about different venues into a dataframe, which had to be cleaned to weed out 'bad data'. The dataframes for each of the locations were cleaned, features which did not convey anything about the location were dropped. Also, if a single feature had too many NaN values, it was dropped. All the rows with NaN values were dropped as well as the rows with irrelevant categories were eliminated.

I followed this process for all the locations I queried, namely:-

- Hotels and event spaces
- Bridal shops, gifts and cosmetics, clothing stores
- Churches
- Bakery shops
- Restaurants

Most people choose to get married at a church, so I have generated a visual representation in the form of a map using Folium library to depict how restaurants and bakery shops cluster together with churches. It is important to note that bridal shops, gift shops, cosmetics and clothing stores have greater importance in the pre-wedding preparation phase rather than on the wedding day itself. However, proximity plays an important role in the case of bakery shops, in order to deliver the wedding cake on time at the required venue as well as in the case of restaurants, to send the order conveniently and punctually. This aspect arises since 'Your Fairytale Wedding' allows clients to select their wedding buffet menu from their favorite restaurants, as opposed to going for a conventional catering service. Thus, I have chosen these three locations for recombination into a single dataframe followed by visual representation. Some people might choose to get married at a banquet hall or an event space, to accommodate this alternative, I have generated another map with bakery shops and restaurants in the vicinity of hotels or event spaces instead of churches. Thus, the three locations chosen for the second visual representation are hotels or event spaces, bakery shops and restaurants. In this manner, I have completed the wedding planner capstone project. You can view the complete code in my Github repository.

RESULTS

The cleaned dataframes for each of the locations with concise information are the deliverables which will be a great help to the staff of 'Your Fairytale Wedding' in personalizing the wedding experience for different clients. Additionally, the maps generated using folium library also contribute to acquiring a sound idea of the desired locations with respect to each other and understanding how they cluster together. These are shown below for your reference.

	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.650594	-79.384530	M5H 2M9	ON
2	VFM Test Hotel	Hotel	123 Test Drive	43.658434	-79.387894	M2M 2M2	ON
8	DoubleTree by Hilton	Hotel	108 Chestnut Street	43.654608	-79.385942	M5G 1R3	ON
9	Shangri-La Toronto	Hotel	188 University Ave.	43.649129	-79.386557	M5H 0A3	ON
10	Hilton	Hotel	145 Richmond St W	43.649946	-79.385479	M5H 2L2	ON
11	Marriott Downtown at CF Toronto Eaton Centre	Hotel	525 Bay Street	43.654728	-79.382422	M5G 2L2	ON
20	Grand Ballroom	Event Space	123 Queen St. W	43.651217	-79.383771	M5H 2M9	ON

Hotel dataframe after cleaning

	name	categories	lat	lng	state	address
1	Bridal Fashion Fraire	Bridal Shop	43.646984	-79.395803	ON	123 Spadina Ave.
2	Gift Shop	Gift Shop	43.654151	-79.392729	ON	317 Dundas Street W
9	The Body Shop	Cosmetics Shop	43.649086	-79.394368	ON	393 Queen St W
11	The Body Shop	Cosmetics Shop	43.646525	-79.380145	ON	200 Bay Street, Unit 103
14	Gift Shop	Gift Shop	43.665595	-79.380148	Ontario	Holiday Inn
23	StyleDemocracy Designer Pop-Up Shop	Clothing Store	43.644685	-79.399359	ON	580 King St W
24	5 Fifty 5 Shop	Gift Shop	43.657254	-79.386692	ON	555 University Ave

Bridal shops, gifts, cosmetics, clothing shops dataframe after cleaning

	name	categories	address	lat	lng	state
0	Our Lady of Mount Carmel Catholic Church 嘉模聖母天主堂	Church	202 St. Patrick St.	43.655329	-79.390672	ON
1	St. Patrick's Church	Church	141 McCaul St.	43.654551	-79.391359	ON
2	St. George The Martyr Anglican Church	Church	205 John St	43.651568	-79.391267	ON
3	Holy Trinity Russian Orthodox Church	Church	23 Henry St.	43.657248	-79.393972	ON
5	The Church of the Holy Trinity	Church	10 Trinity Sq	43.654580	-79.381705	ON
7	Chinese Presbyterian Church	Church	177 Beverley St	43.655635	-79.394259	ON

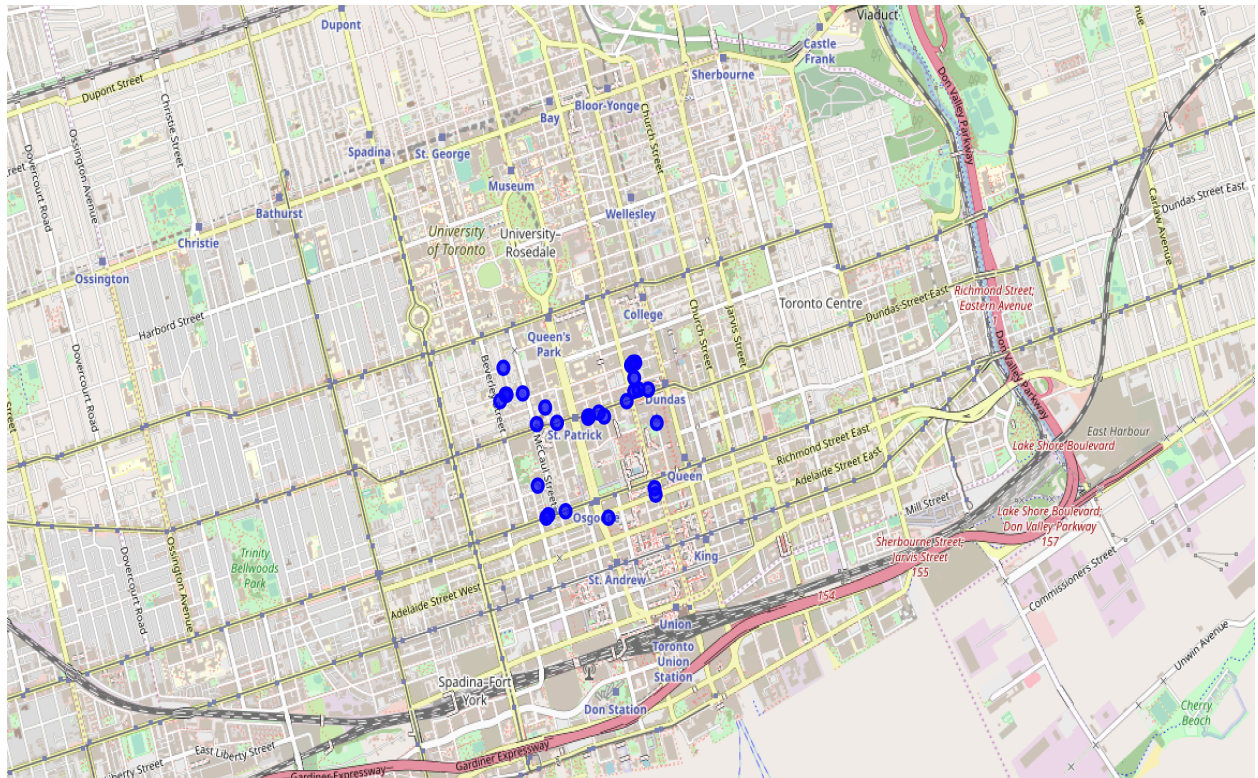
Churches dataframe after cleaning

	name	categories	address	lat	lng	state
0	Bakery 18	Bakery	595 Bay St.	43.656765	-79.383548	ON
1	Bakery & Kaffee Haus	Bakery	238 Queen Street West	43.650096	-79.390378	ON
2	Kin-Kin Bakery & Bubble Tea	Bakery	595 Bay St.	43.656198	-79.382403	ON
3	Paris Croissant Bakery Cafe	Bakery	595 Bay St	43.656204	-79.383210	ON

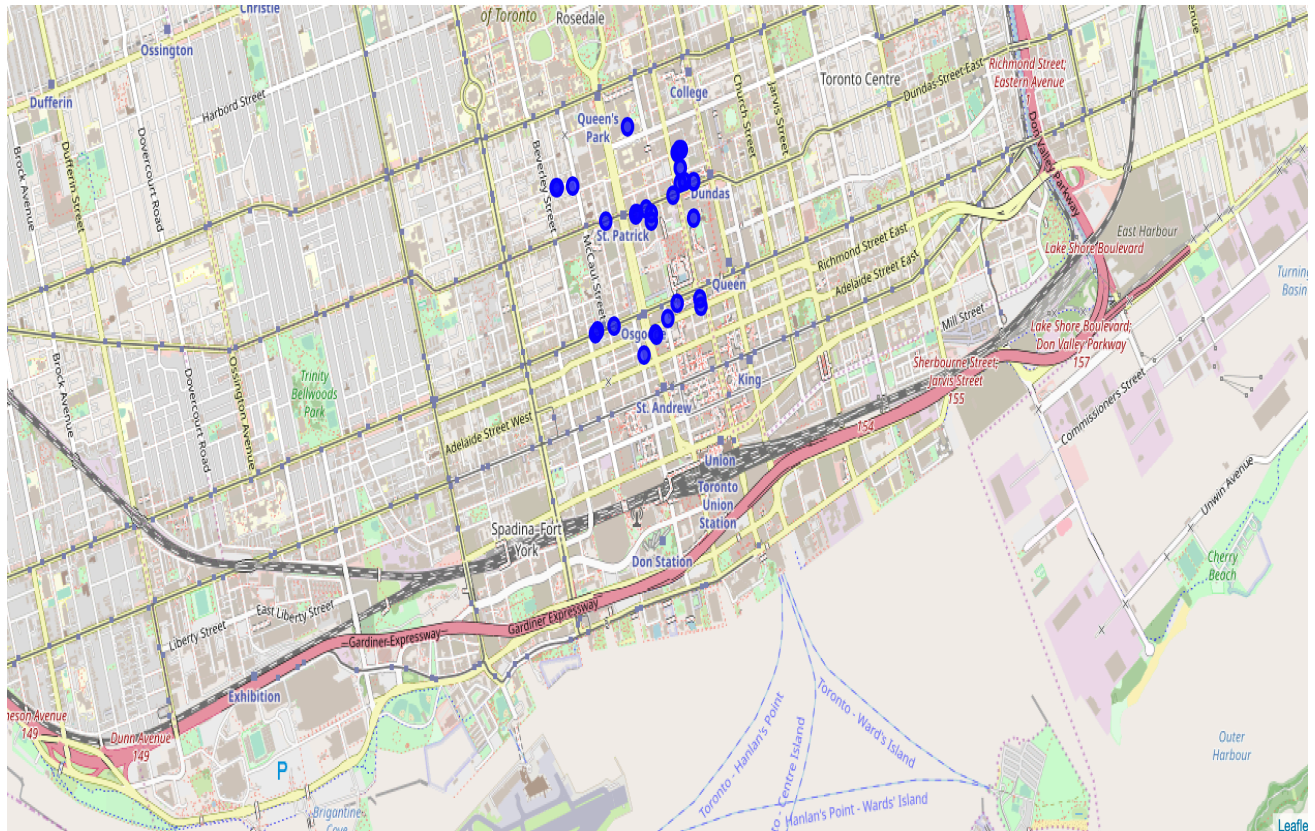
Bakery shops dataframe after cleaning

	name	categories	address	lat	lng	postalCode	state
0	Hemispheres Restaurant & Bistro	American Restaurant	110 Chestnut Street	43.654884	-79.385931	M5G 1R3	ON
2	Hong Shing Chinese Restaurant	Chinese Restaurant	195 Dundas St W	43.654925	-79.387089	M5G 1C7	ON
3	Wah Too Seafood Restaurant	Chinese Restaurant	56 Centre Ave.	43.654833	-79.387206	M5G 1R5	ON
6	Tundra Restaurant	Restaurant	145 Richmond Street West	43.650010	-79.385608	M5H 2L2	ON
7	Cali Restaurant	Vietnamese Restaurant	179 Dundas St. W.	43.655068	-79.386375	M5G	ON
8	Adega Restaurant	Restaurant	33 Elm St	43.657519	-79.383462	M5G 1H1	ON
9	Donatello Restaurant	Italian Restaurant	37 Elm St.	43.657489	-79.383605	M5G 1H1	ON
11	Anoush Restaurant	Restaurant	250 Dundas St W	43.654588	-79.389692	M5T 2Z5	ON
12	The Elm Tree Restaurant	Modern European Restaurant	43 Elm St	43.657397	-79.383761	M5G 1H1	ON
13	Wah Sing Seafood Restaurant	Chinese Restaurant	47 Baldwin Street	43.655936	-79.393783	M5T 1L1	ON
14	Alio Restaurant & Wine Bar	Italian Restaurant	108 Dundas St W	43.655655	-79.384124	M5G 1C3	ON
17	Spring Rolls I Japanese Restaurant in Toronto	Theme Restaurant	40 Dundas St W Box 36,	43.656105	-79.383495	M5G 2C2	ON
18	Little India Restaurant	Indian Restaurant	255 Queen St. W	43.650319	-79.388998	M5V 1Z4	ON
19	The Winding Road Restaurant	Chinese Restaurant	5 Baldwin St	43.656013	-79.392451	M5T 1L1	ON
20	Ali Baba's	Middle Eastern Restaurant	199 Dundas St. W	43.654916	-79.387172	M5g 1c8	ON
22	Maezo Restaurant & Bar	Indian Restaurant	67 Richmond Street West	43.651091	-79.381843	M5H 1Z5	ON
24	Maezo Restaurant	Indian Restaurant	67 Richmond St West	43.651395	-79.381888	M5H 1W2	ON
28	East Restaurant Asian Street Flair	Asian Restaurant	240 Queen Street West	43.649985	-79.390563	M5v1z7	ON
29	Toronto Big Bowl Restaurant	Szechuan Restaurant	45 Baldwin St	43.655934	-79.393731	M5T 1L1	ON

Restaurants dataframe after cleaning



Folium map to visualize church neighborhood including restaurants and bakery shops



Folium map to visualize hotel and event space neighborhood including restaurants and bakery shops

DISCUSSION

It can be observed how the number of restaurants within the given 500 meters radius are more than the other locations. Clients have a wide array of options to select the menu for their wedding buffet. There are a reasonable number of churches after cleaning the data and removing the irrelevant categories from the dataframe. Although our search query was 'Bridal shop', it is important to note that gifts and cosmetics as well as clothing stores are closely related to it and form an important aspect of the wedding shopping phase. Hence, we have retained all of these categories. A reasonable number of bakery shops are also found, providing a fair number of options to our clients. Deciding on the theme of the cake as well as its size, flavor, aesthetic appeal, taste preference and the like is also a very time-consuming task. Thus, having too many

alternatives for the bakery shops would have proved counter-productive. This also hints at the fact that our choice of radius, which we arrived at by trial and error, was appropriate. A larger radius would unnecessarily result in more outlets, while it is tempting to conclude that it is better to have more options, more often than not, it is seen that this tends to confuse clients and results in a higher workload for the individual wedding planners in charge.

CONCLUSION

‘Your Fairytale Wedding’ can successfully forward a consolidation of the required information to their staff, who can’t wait to craft an unforgettable wedding experience for their clients. For seeing fellow human-beings happy and beaming joyfully is the ultimate goal of ‘Your Fairytale Wedding’!