

EVALUATING BUSINESS OPPORTUNITIES AROUND UNIVERSITY OF TORONTO - DOWNTOWN CAMPUS

1. INTRODUCTION

Background -

Downtown Toronto has a lot to offer to its residents and travelers all around the world as a city and diverse population. With skyscrapers looming over the skyline and a crowd of well suited aristocrats, the posh most part of Toronto may seem impenetrable but it isn't. Downtown Toronto is the main central business district of Toronto, Ontario, Canada. Located entirely within the district of Old Toronto, it is approximately 17 square kilometers in area, bounded by Bloor Street to the northeast and Dupont Street to the northwest, Lake Ontario to the south, the Don Valley to the east, and Bathurst Street to the west. The posh most neighborhoods are around the coast and a cluster of neighborhoods exists. Due to its large population of artists and young professionals, Downtown Toronto has become a hub for cutting-edge art and design, hip neighborhoods and great shopping, all within the downtown core, an area that can easily be explored on foot. The clusters of corporate parks offer a variety of options for leisure spending including exploring cuisine options at world famous food joints, shopping and mulling over art, history, fashion and science at Toronto's best museums and other number of cultural activity centers.

Business Understanding -

Our target location, University of Toronto – St Georgia campus is at the heart of Downtown Toronto, though separated from the corporate setup. The project aims at exploring business opportunities in the surrounding neighborhoods of the campus, mainly focusing overall on recreation and dining, and not particularly on essential services and premium essential services. Evaluation of existing businesses and identifying gaps and scopes is completely centered around the student life in the campus. Main focus while exploring would be the number and types of popular food joints. Given that a lot of options for recreation and leisure spending exists further downtown, the analysis has to be specific towards the location, limiting it to the immediate vicinity of campus. The opportunities would be compared with those existing in the surrounding neighborhood. The focus would be to identify key aspects about absence of a specific dining or recreational setups around the campus, existence of which would be fulfilling and would attract the student community, and they wouldn't need to travel to other neighborhood for it.

2. DATA REQUIREMENTS

The following data would be needed from online resources, for this project.

- Neighborhood location data in the borough Downtown Toronto and other borough near it in city of Toronto [Features – Latitude,, Longitude, Postal Code,Name of Neighborhood and Borough].
- Location of neighborhoods around the University of Toronto and the ir relative position in the MAP.
- Popular Venues data from Foursquare API or a specified Neighborhood by Latitude and Longitude. [Features – Name, Category]
- Separate data sets for category of Food and Non Food Venues.
- A specified queried data for a type of venue say Coffee Shop or a Beer Bar (exact class would be made clear as the analysis proceeds. Retrieved through Foursquare API.
- All above Venues data needed for Neighborhoods in immediate vicinity of University of Toronto and Surrounding Neighborhoods.
- Student demographic data from University of Toronto[Features – Age,Sex,Nationality].
- Student data from other countries studying in University of Toronto [features – number].

3. METHODOLOGY (with RESULTS)

Tools –

- Jupyter notebook with Python 3 Kernel on Skills Networks Labs
- Libraries – Pandas,Numpy,BeautifulSoup4,Geocoder,Folium,Matplotlib

Scrapping the Neighborhoods data from webpages and Visualization –

Thre following link would be used for accesing the tabke from wiki-page on infroation n neighborhoods and borough in Toronto city

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

Beautiful Soup Library is used for scarping the data, which is further converted to Pandas data frame for ease of further analysis. Not assigned Boroughs are removed Not assigned Neighborhoods are assigned Borough. The data is concatenated with Latitude and Longitude retrieved from the url:http://cocl.us/Geospatial_data.After basic preprocessing and cleaning of data is of 103 rows with 3 features, the head of the table as shown below.

Table1 : Merged Dataframe Head

[6]:	Postalcode	Borough	Neighbourhood	Latitude	Longitude
0	M1B	Scarborough	Rouge, Malvern	43.806686	-79.194353
1	M1C	Scarborough	Highland Creek, Rouge Hill, Port Union	43.784535	-79.160497
2	M1E	Scarborough	Guildwood, Morningside, West Hill	43.763573	-79.188711
3	M1G	Scarborough	Woburn	43.770992	-79.216917
4	M1H	Scarborough	Cedarbrae	43.773136	-79.239476

Visualizing the data with neighborhood markers on map of Toronto with folium library package, we observe that two immediate neighborhoods exist in the vicinity of campus, i.e Harbord, University of Toronto and Queen's park as encircled in the map in red, Fig.1.

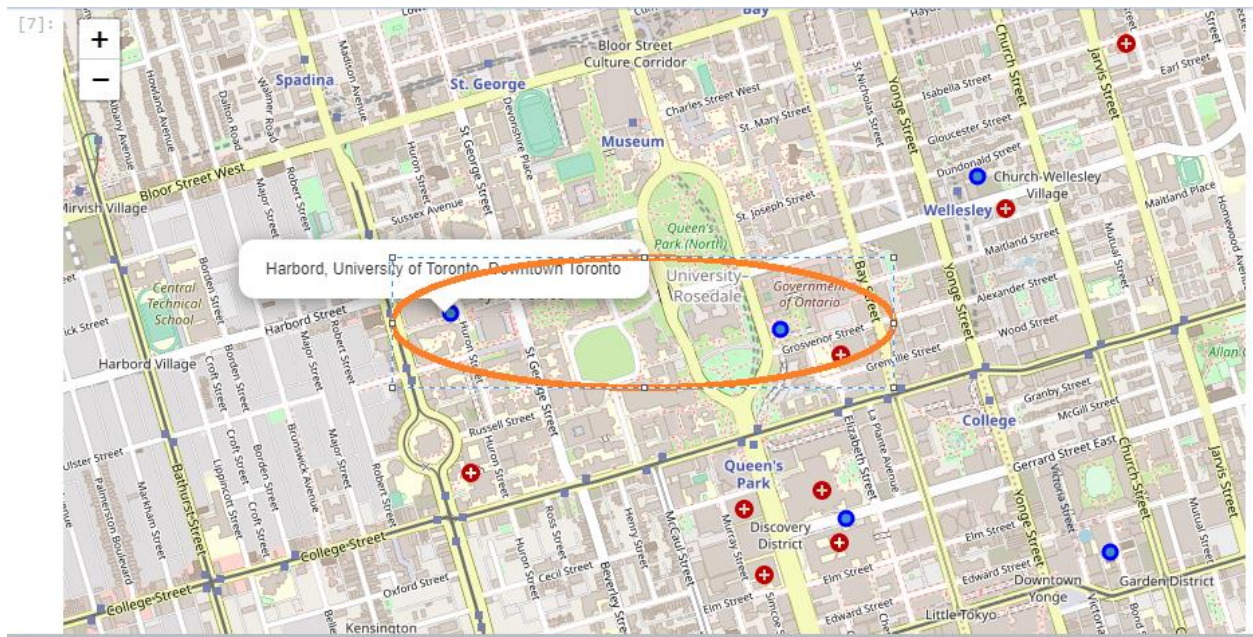


Fig1: Neighborhoods near University

There are a total of 19 different neighborhoods in Downtown Toronto as shown in Fig 2.

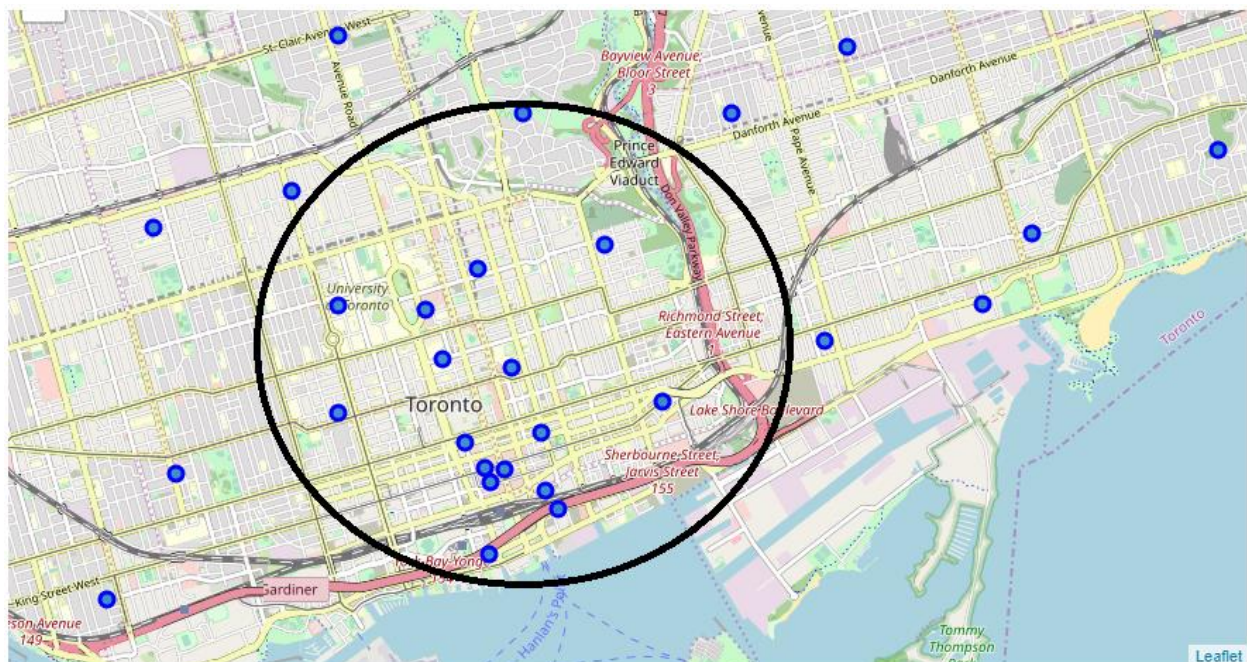


Fig2: Downtown Toronto

Retrieving and analyzing Top Venues near Campus –

A total of 189 different venues with 90 categories are retrieved from Foursquare API database, first 10 rows of which is shown in the table below

[17]:

	name	categories	lat	lng
0	Queen's Park	Park	43.663946	-79.392180
1	Neo Coffee Bar	Coffee Shop	43.660140	-79.385870
2	Mercatto	Italian Restaurant	43.660391	-79.387664
3	Central YMCA	Distribution Center	43.663083	-79.385025
4	The Yoga Sanctuary	Yoga Studio	43.661499	-79.383636
5	The Alley	Bubble Tea Shop	43.665922	-79.385567
6	Jimmy's Coffee	Coffee Shop	43.658421	-79.385613
7	Bar Volo	Beer Bar	43.665462	-79.385692
8	Starbucks	Coffee Shop	43.659456	-79.390411
9	College Park Area	Park	43.659751	-79.384911

Table2: Data frame of Venues near campus.

The retrieved location of recreational and food outlets around the university campus in the immediate vicinity can be visualized by the following map figure.

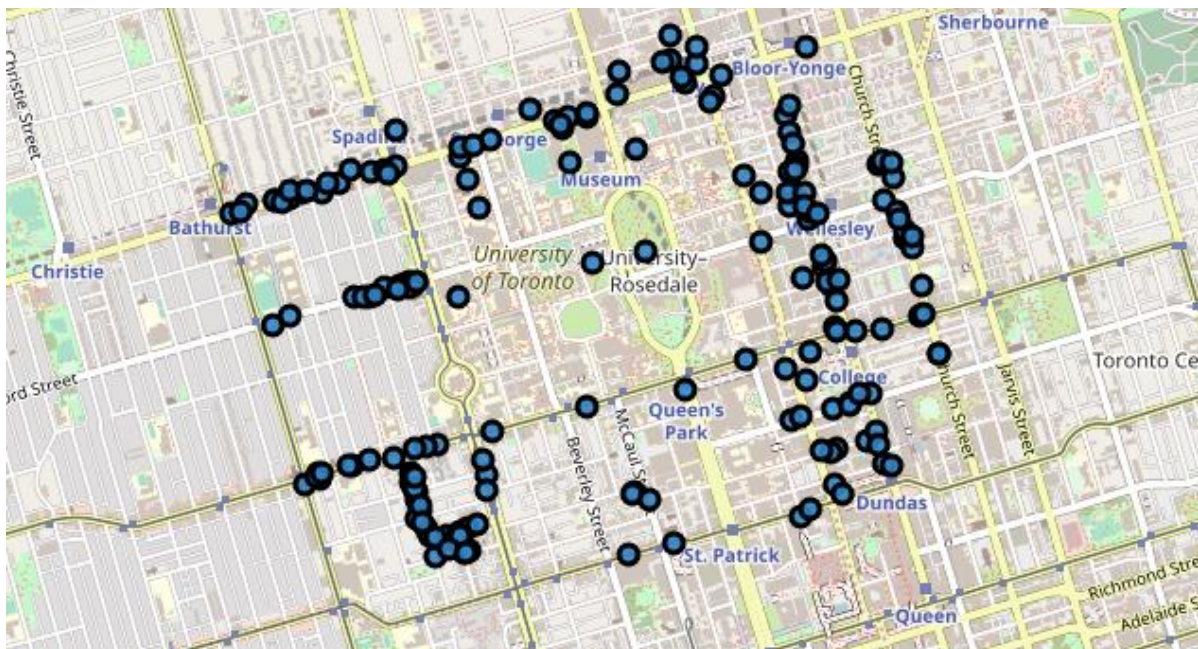


Fig3: Location of retrieved venues around campus

We proceed by further partitioning venues into food,non food .In the non food data, we concentrate only upon commercial recreational and shopping outlets, removing essential services and utilities.

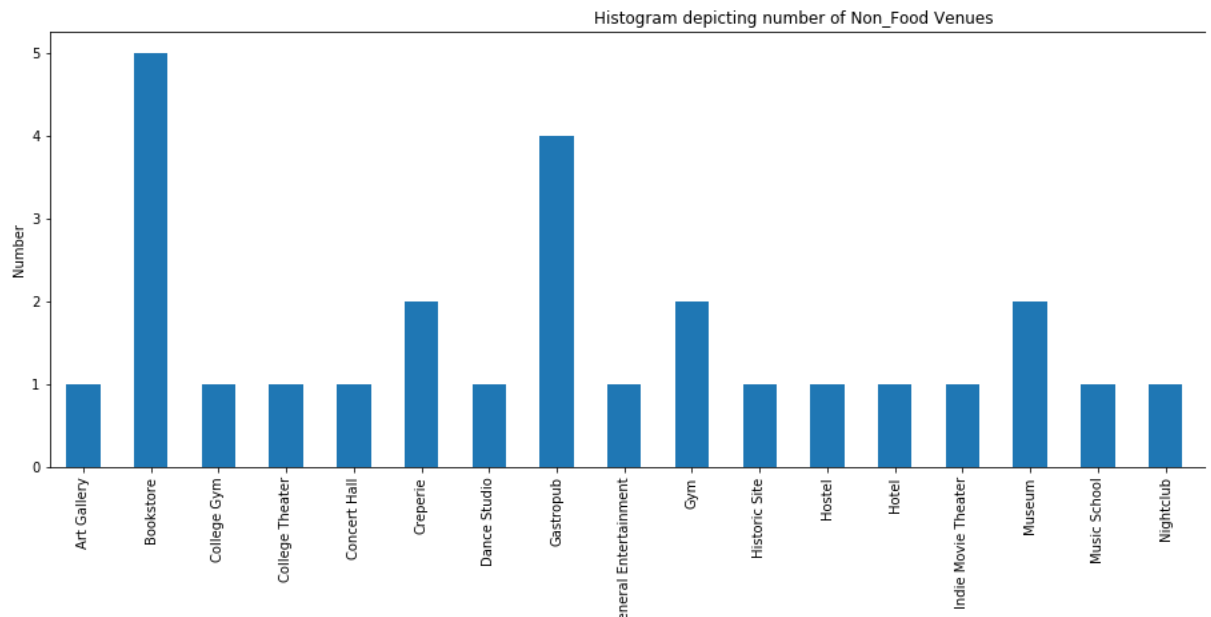


Fig4 : Histogram Depicting number of Popular Non_Food Venues

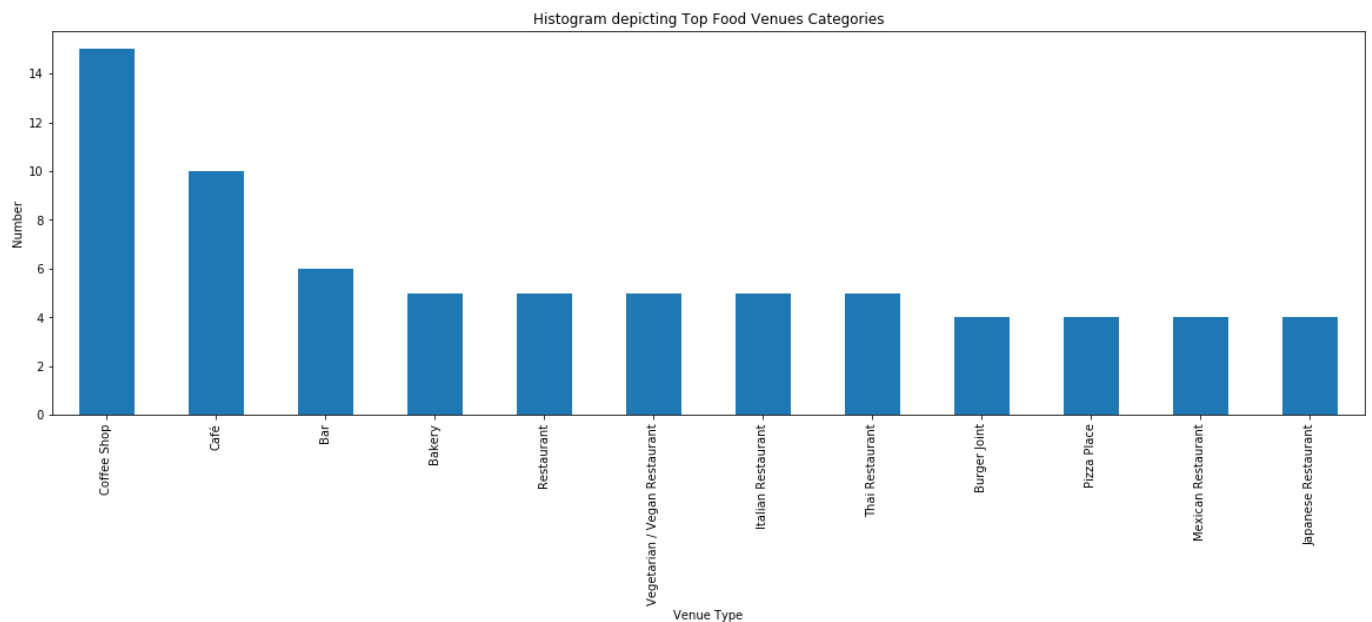


Fig5 : Histogram Depicting number of Popular Food Venues

The other popular food venues are listed below.

Bubble Tea Shop	3
Sushi Restaurant	3
Pub	3
Beer Bar	3
Dessert Shop	3
Ramen Restaurant	3
Burrito Place	2
Ethiopian Restaurant	2
Gay Bar	2
Ice Cream Shop	2
Tea Room	2
Middle Eastern Restaurant	2
Seafood Restaurant	2
Indian Restaurant	1
Caribbean Restaurant	1
Theme Restaurant	1
Belgian Restaurant	1
Breakfast Spot	1
Brewery	1
Sandwich Place	1
Salon / Barbershop	1
Persian Restaurant	1
Chinese Restaurant	1
Greek Restaurant	1
Pastry Shop	1
Comfort Food Restaurant	1
Modern European Restaurant	1
Doner Restaurant	1
Dumpling Restaurant	1
Eastern European Restaurant	1
French Restaurant	1
Juice Bar	1
Wings Joint	1

Retreiving Data from around downtown toronto –

Next we analyse all the other neighborhoods except Harbord and Queens Park in downtown Toronto. We pull out 208 unique categories of venues, much of which overlap with those found in vicinity of campus.

Coffee Shop	137
Café	66
Restaurant	51
Hotel	34
Japanese Restaurant	32
Italian Restaurant	31
Bakery	29
Seafood Restaurant	24
Bar	24

Table3: Number of Top Food Venues

Given the abundance of Coffee Shops, Bars, Bakeries and general fast food joints we next explore specialty restaurants in vicinity of campus and compare it with those in whole of downtown Toronto.

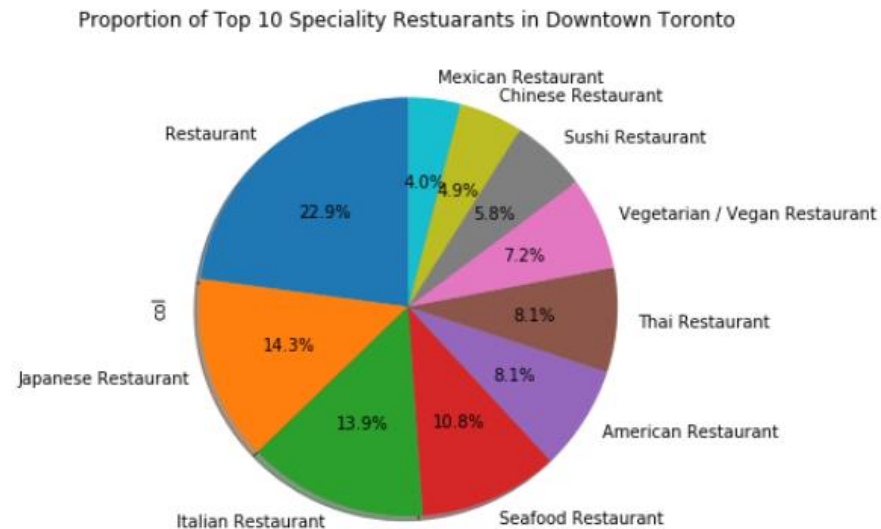


Fig5 :Pie Chart Depicting Proportion of Top 10 Specialty Restaurants in Downtown Toronto

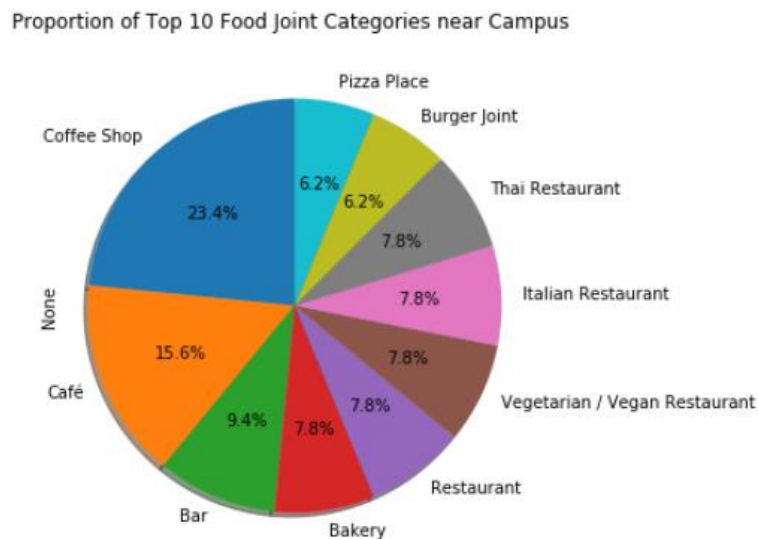


Fig5 :Pie Chart Depicting Proportion of Top 10 Food Joints near U T

Student Demographic Data –

Some of the publicly released student data by U T for year 2017 is analyzed in this report. Of the 65,051 full-time undergraduate students last year, 55.7 per cent identified as female, 43.7 per

cent as male, 22 students as another gender identity, and 341 students' gender identities remained undisclosed.

Part-time undergraduates were 61 per cent female in 2007. The 2017 data shows a slight majority male student population among part-time undergraduates. Part-time graduate students had the largest disparity in gender, with 64.4 per cent of the population identifying as female — two per cent up from 2007 numbers.

An important observation is that an overwhelming amount of international students at U of T are from China, both graduate and undergraduate students, with other countries making up a small percentage in comparison. With 65.1 per cent of the undergraduate international student enrolment, the 10,463 Chinese international students made up 14.6 per cent of U of T's total undergraduate population in 2017. Trends remain similar for graduate international enrolment. Students from China made up 34.7 per cent of the graduate international student population. Other significant amount of students are form India making upto 11.4 percent of the student population.

Retrieving Top Indian Restaurants Data from FourSquare -

With search query 'Indian' we retrieve top Indian Restaurants from Foursquare API. Following data was received as shown in table below -

	name	categories	address	crossStreet	lat	lng	labeledLatLngs	distance	postalCode	cc	city
0	Veda Healthy Indian Takeout	Indian Restaurant	10 Kings College Rd.	in Sandford Fleming	43.659806	-79.395084	[{"label": "display", "lat": 43.65980608863362...	347	M5S 3G4	CA	Tor
1	Indian Biryani House	Indian Restaurant	181 Dundas St W	W of Chestnut St	43.655120	-79.386645	[{"label": "display", "lat": 43.65511996683289...	1132	M5G 1C7	CA	Tor
2	Jodpore Club Indian Cuisine	Indian Restaurant	NaN	NaN	43.655946	-79.393504	[{"label": "display", "lat": 43.655946, "lng":...	794	NaN	CA	Tor
3	Utsav Indian Cuisine	Indian Restaurant	69 Yorkville Ave.	NaN	43.671154	-79.390802	[{"label": "display", "lat": 43.67115433553916...	999	M5R 1B8	CA	Tor
4	Mami's Indian Cuisine	Food Truck	NaN	NaN	43.656986	-79.385840	[{"label": "display", "lat": 43.65698561897954...	1031	M5G 2N2	CA	Tor
5	Kothur Indian Cuisine	Indian Restaurant	649 Yonge St.	NaN	43.667872	-79.385659	[{"label": "display", "lat": 43.66787229558206...	979	M4Y	CA	Tor
6	Bhoj Indian Cuisine	Indian Restaurant	21 Davenport Rd	NaN	43.672765	-79.389063	[{"label": "display", "lat": 43.67276456431629...	1221	M5R 1H2	CA	Tor

Table4: Top 5 popular Indian Restaurants in Downtown Toronto

When searched for ratings of top 3 restaurants, the result was this restaurant hasn't been rated yet.

4.DISCUSSION

- First analyzing the retrieved location of popular non_food outlets around the university campus in the immediate vicinity, we see that there's a plethora of options for recreation, new skill development and sports and fitness. Relatively fewer number of theaters exist, given the capacity of students of students and University of Toronto. This is a potential option and must be analyzed further through student surveys of their entertainment preferences.
- For popular food venues around campus, there are abundant conventional spots like coffee shops and cafes(23), Bar and pubs(10) and popular fast and convenience food joints of Burger and Pizza(8) along with many bakeries.
- Given the diversity of international students in UT, we focus our attention to specialty restaurants. While we can see a number of popular Italian(4) ,Thai(4),Mexican(3) Restaurants, Chinese and Indian restaurants are nowhere to be seen in the entire histogram. There is just one Chinese and Indian Restaurant.
- Chinese and Indian students making up for almost a quarter of student population at the UT's total strength of 62k students, we focus our attention to their specialty restaurants. Thus we explore all neighborhoods in Downtown. As seen in Fig5, Chinese make up to just 5% of top food outlets while Indian is nowhere in picture.
- Retrieving top 5 Indian outlets in Downtown Toronto, we observe that even the top outlets don't have enough footfalls and haven't been user rated. Biryani is the most popular Indian Cuisine dish and it ought to be more prominent and highlighted in Specialty Restaurant Clusters.

5.CONCLUSIONS

As discussed above, opening an Indian Restaurant outlet is a feasible business opportunity given the absolute lack of good outlets in Downtown Toronto and with big chunk of International students in UT being from India. Abundant Indian population would ensure minimum sales requirements and traffic would be fulfilled positively, so it's a completely safe venture. Apart from that, with growing craze for Indian cuisine worldwide, the large working population of artists, young professional, aristocrats and bureaucrats would love to indulge in authentic Indian cuisine.