

The background is a dark blue gradient with a subtle pattern of white dots. Overlaid on this are several faint, light blue circular elements. A large circular scale is prominent on the left side, with numerical markings from 140 to 260 in increments of 10. Other smaller circles and arcs are scattered across the frame, some with arrows indicating a clockwise direction.

# IDENTIFYING THE RESTAURANT CUISINE TRENDS

IBM APPLIED DATA SCIENCE CAPSTONE PROJECT

HWEI ONG

# INTRODUCTION



# BUSINESS PROBLEM / TARGET AUDIENCE

The business problem: how to identify restaurant cuisine trends in a city.

The target audience would be:

- investors and/or restaurateurs (i.e. commercial business planning) who are interested in opening a new restaurant;
- policy wonks involved in urban planning as such analytics can guide the zoning of different areas for development; and
- property developers who are interesting in knowing what new property type would be suitable for an area (e.g. a mixed-use residential building vs. a commercial building).

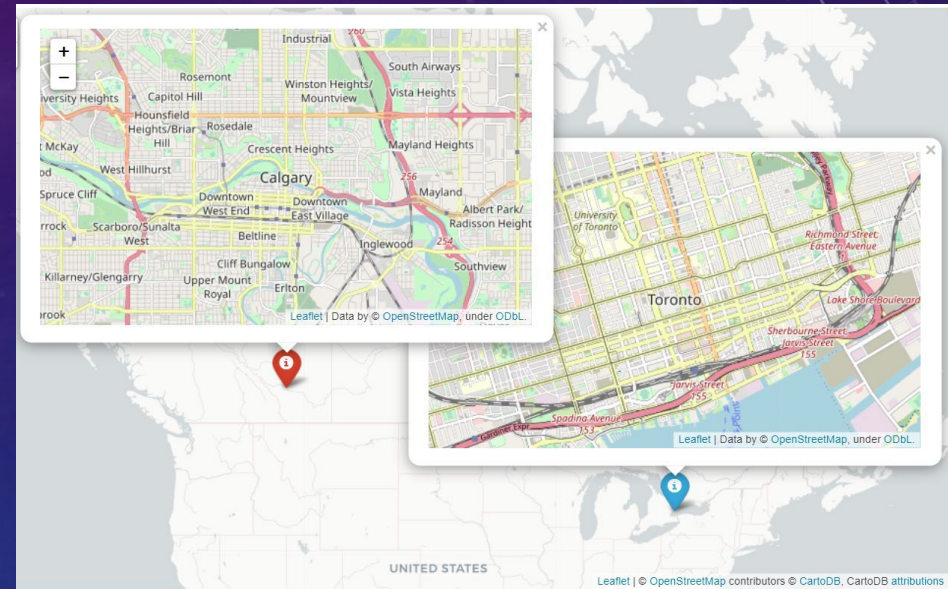


# REQUIRED DATA

The Canadian cities used in this analysis are Toronto, ON and Calgary, AB.

The following data are required:

- A list of neighborhoods and their respective latitude and longitude coordinates for each city
- A list of venues found in each neighborhood(s)



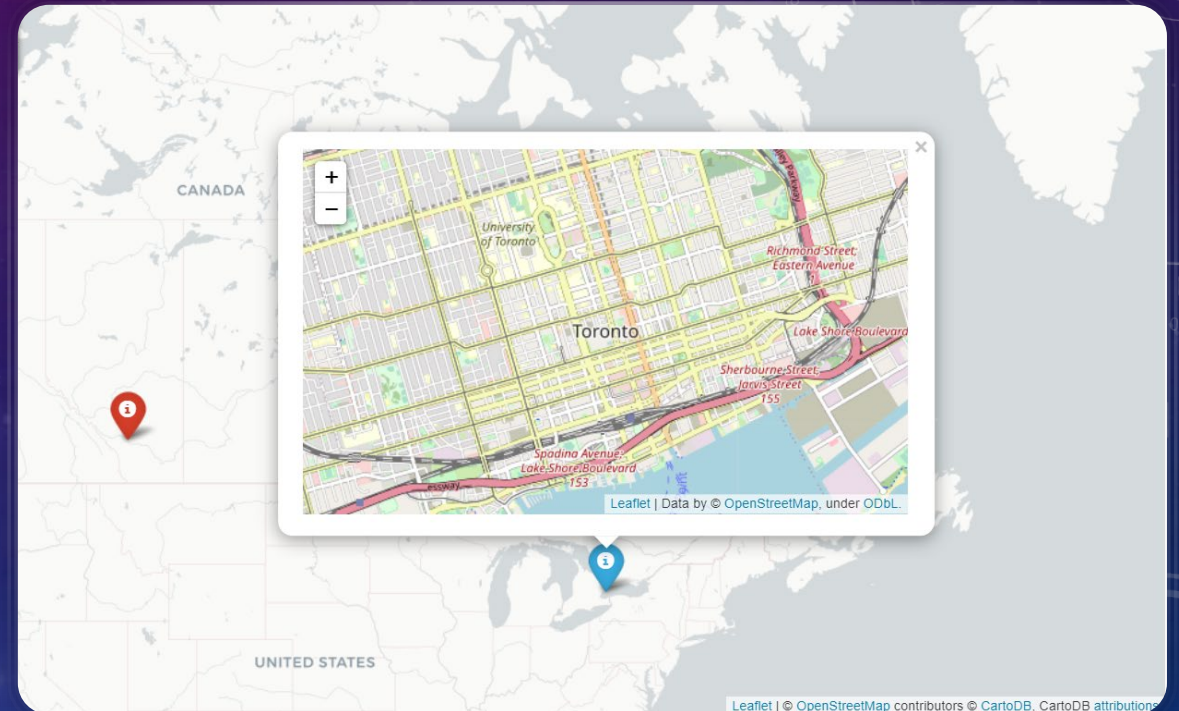
# DATA ACQUISITION AND CLEARNING

The list of neighborhoods for Toronto, ON and Calgary, AB was scraped from the following Wikipedia pages:

- Toronto ([https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada: M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M))
- Calgary ([https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada: T](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_T))
- Null and duplicate values were dropped
- Features for each neighborhood(s) were obtained using Foursquare API
  - those corresponding to restaurant types were extracted
- The cleaned dataset contains :
  - 43 features for 39 neighborhoods in Toronto
  - 25 features for 33 neighborhoods in Calgary.

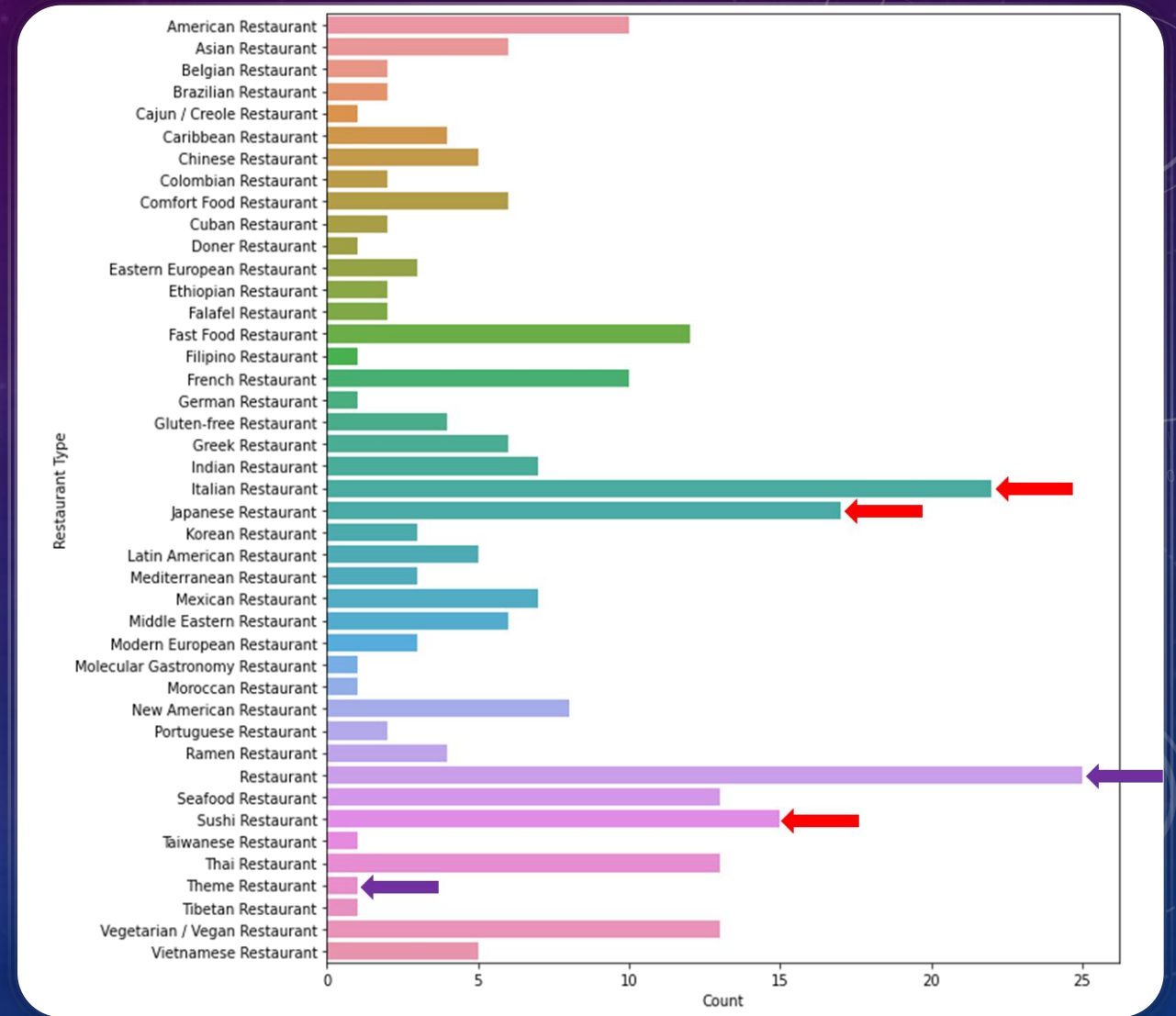


# TORONTO



# AGGREGATION OF RESTAURANTS BY CUISINE TYPE / TORONTO

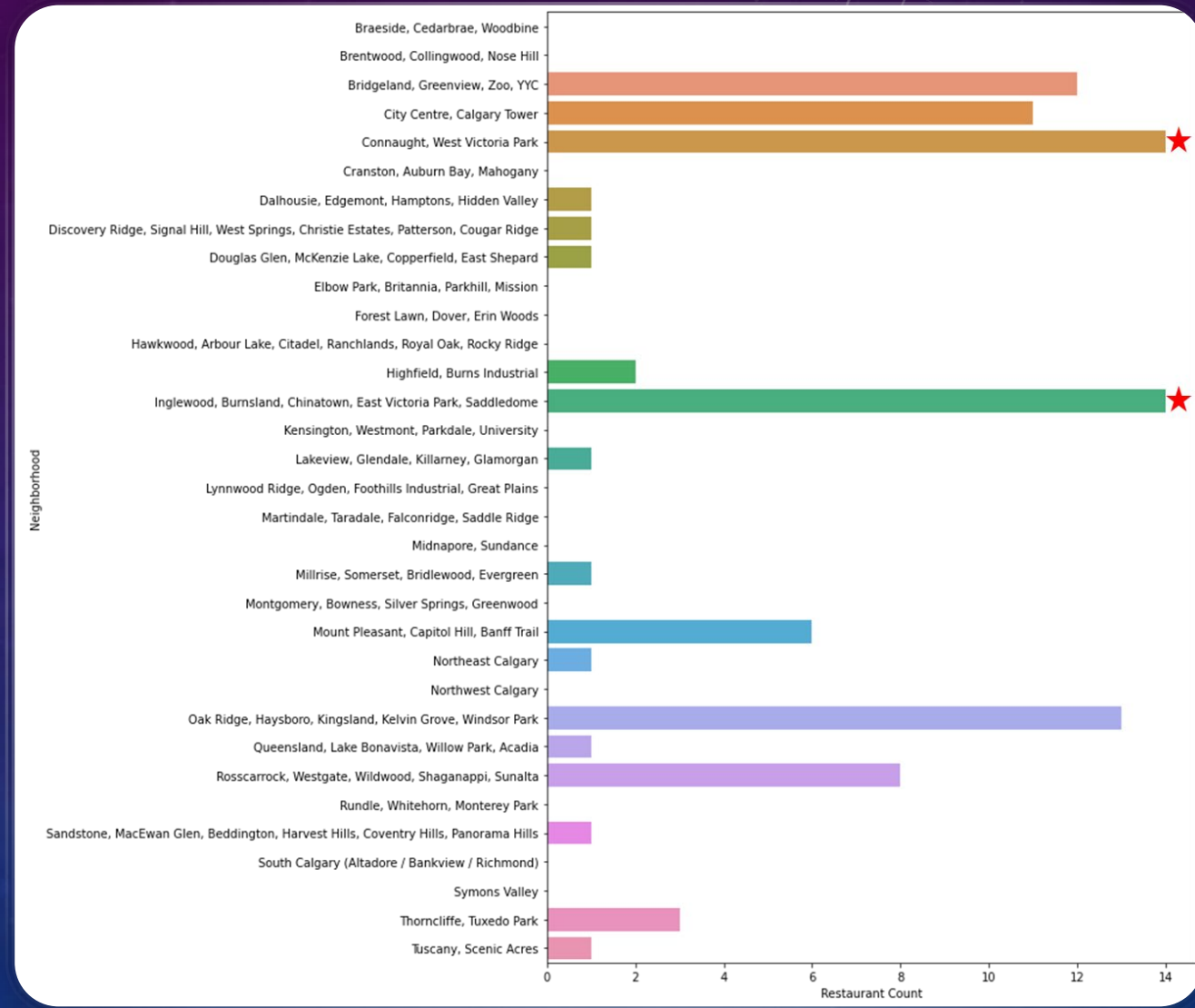
- The predominant cuisines (indicated by red arrows):
  1. Italian
  2. Japanese
  3. Sushi
- Indeterminate cuisine type by the 'Restaurant' and 'Theme Restaurant' (indicated by purple arrows)



# TOTAL NUMBER OF RESTAURANTS / TORONTO

The red stars show the top two sites with a high number of restaurants:

1. First Canadian Place and Underground City
2. Church and Wellesley





# PREDOMINANT CUISINE PER CLUSTER / TORONTO

Cluster 1 : Sushi

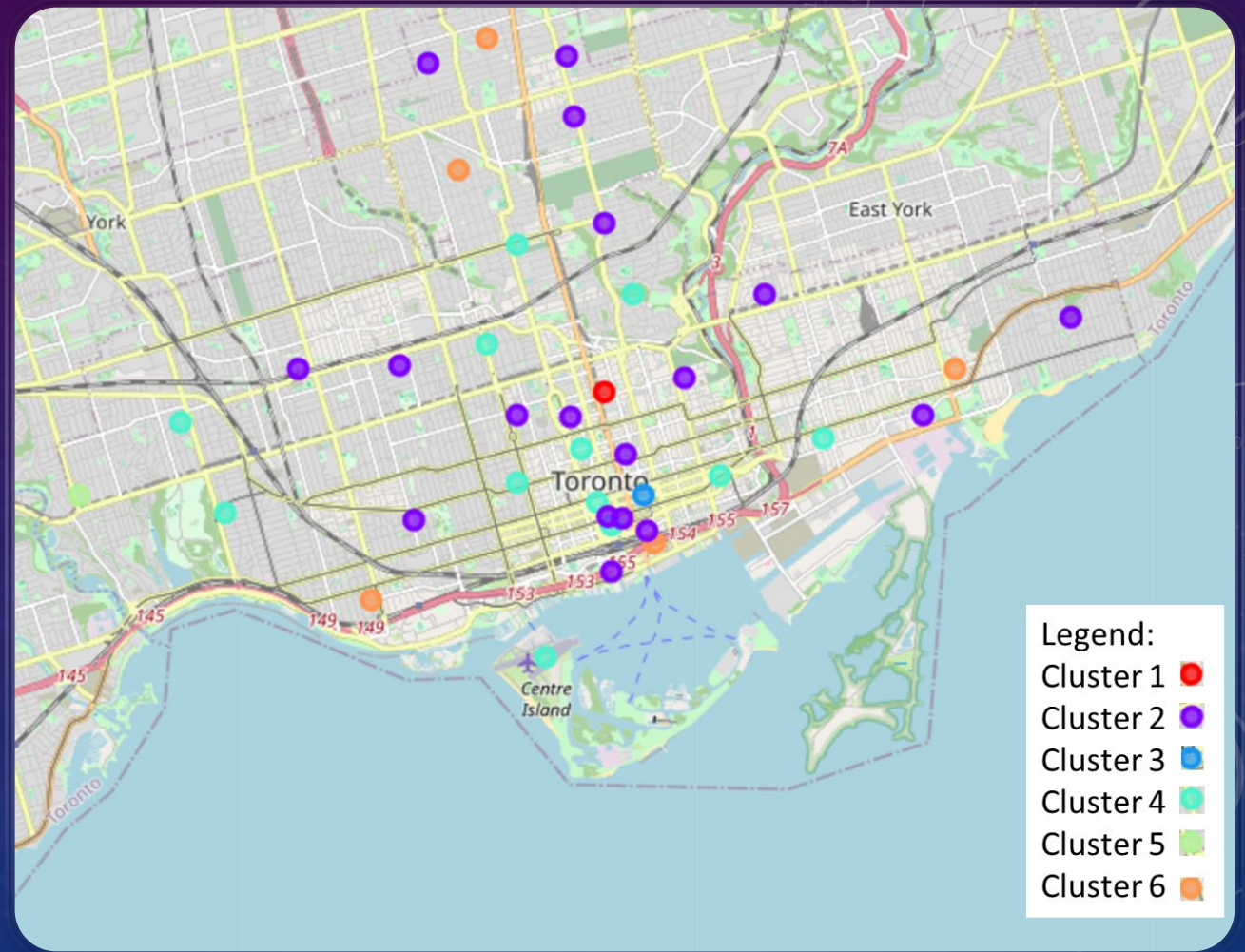
Cluster 2 : Vietnamese

Cluster 3 : Thai

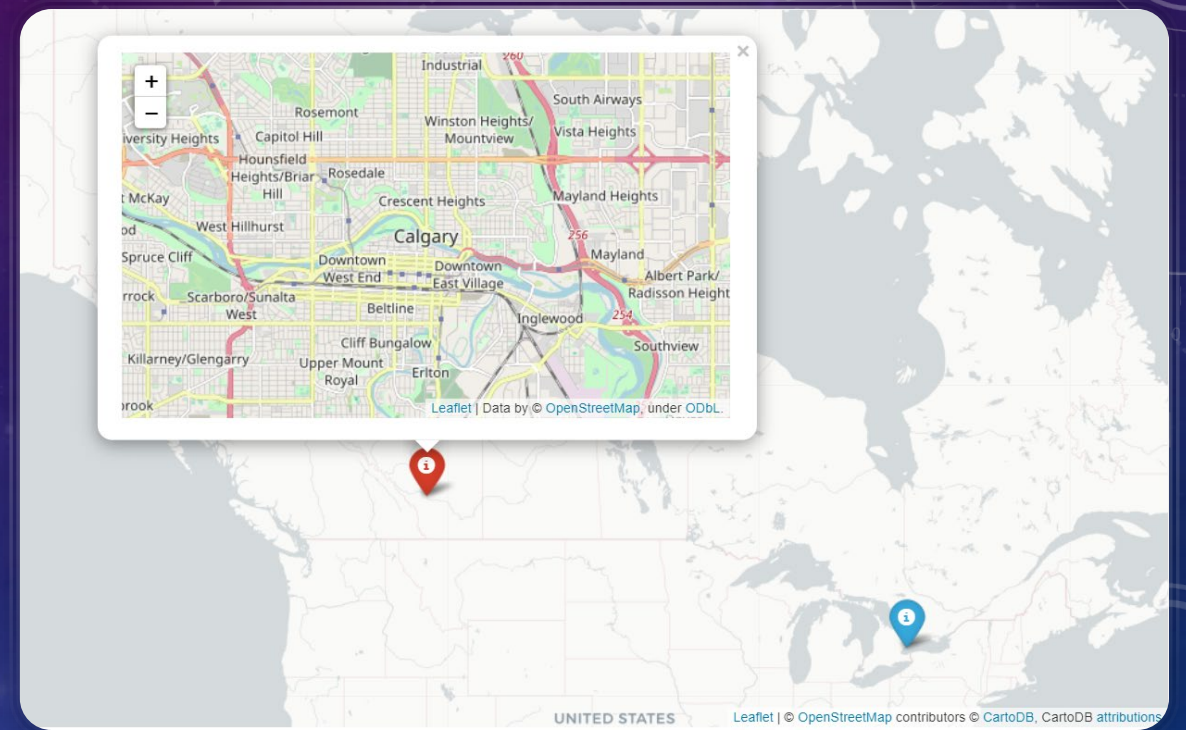
Cluster 4 : Vietnamese

Cluster 5 : Greek

Cluster 6 : equally split between Sushi  
and Fast Food



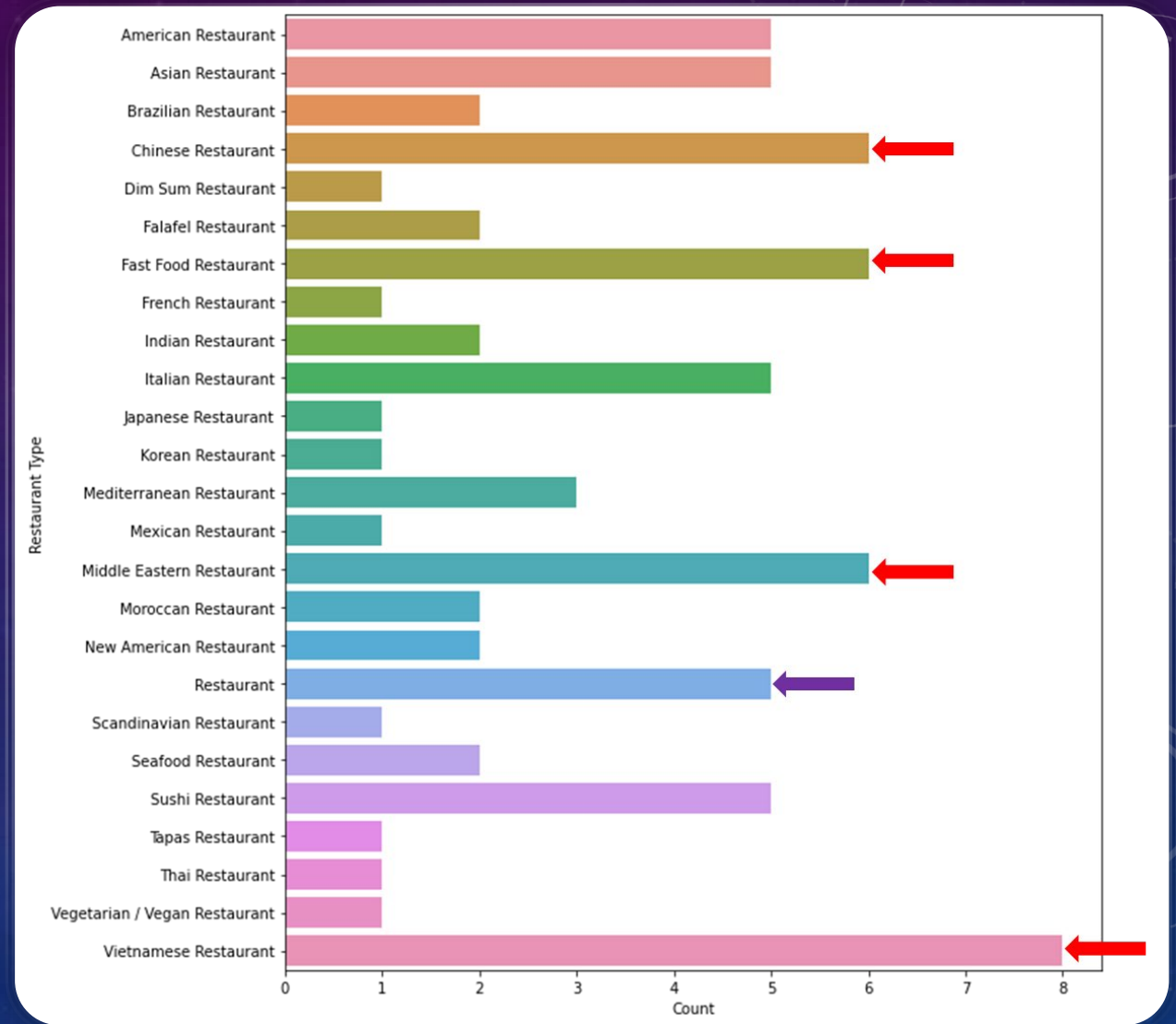
# CALGARY





# AGGREGATION OF RESTAURANTS BY CUISINE TYPE / CALGARY

- The predominant cuisines (indicated by red arrows):
  1. Vietnamese
  2. Middle Eastern
  3. Fast Food
  4. Chinese
- Indeterminate cuisine type by the 'Restaurant' (indicated by purple arrow)

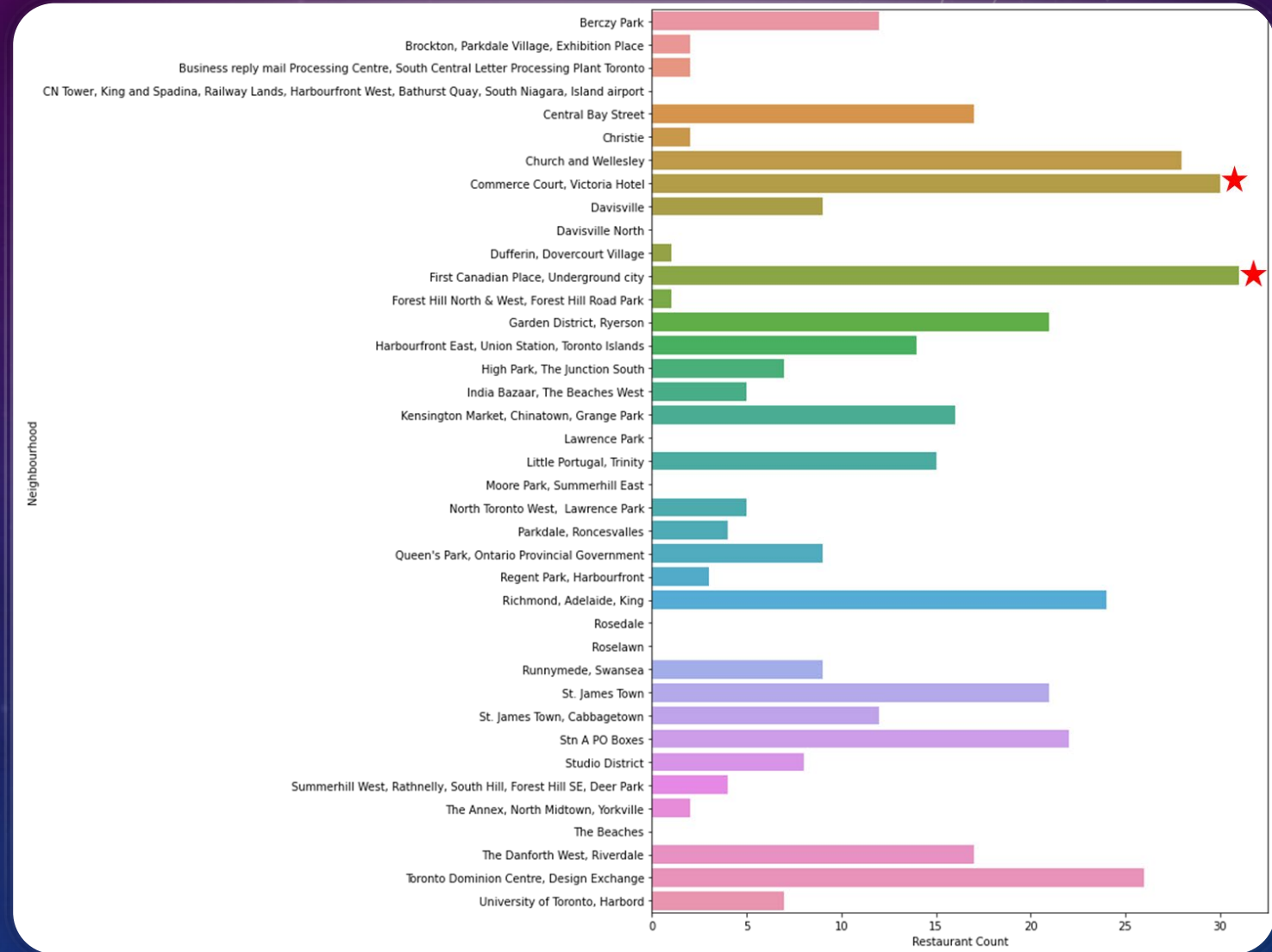




# TOTAL NUMBER OF RESTAURANTS / CALGARY

The red stars show the top two sites with a high number of restaurants:

1. Connaught West and Victoria Park
2. Inglewood, Burnside, Chinatown, East Victoria Park and Saddlestone. Church and Wellesley



# PREDOMINANT CUISINE PER CLUSTER

Cluster 1 : Asian (Vietnamese  
and Chinese)

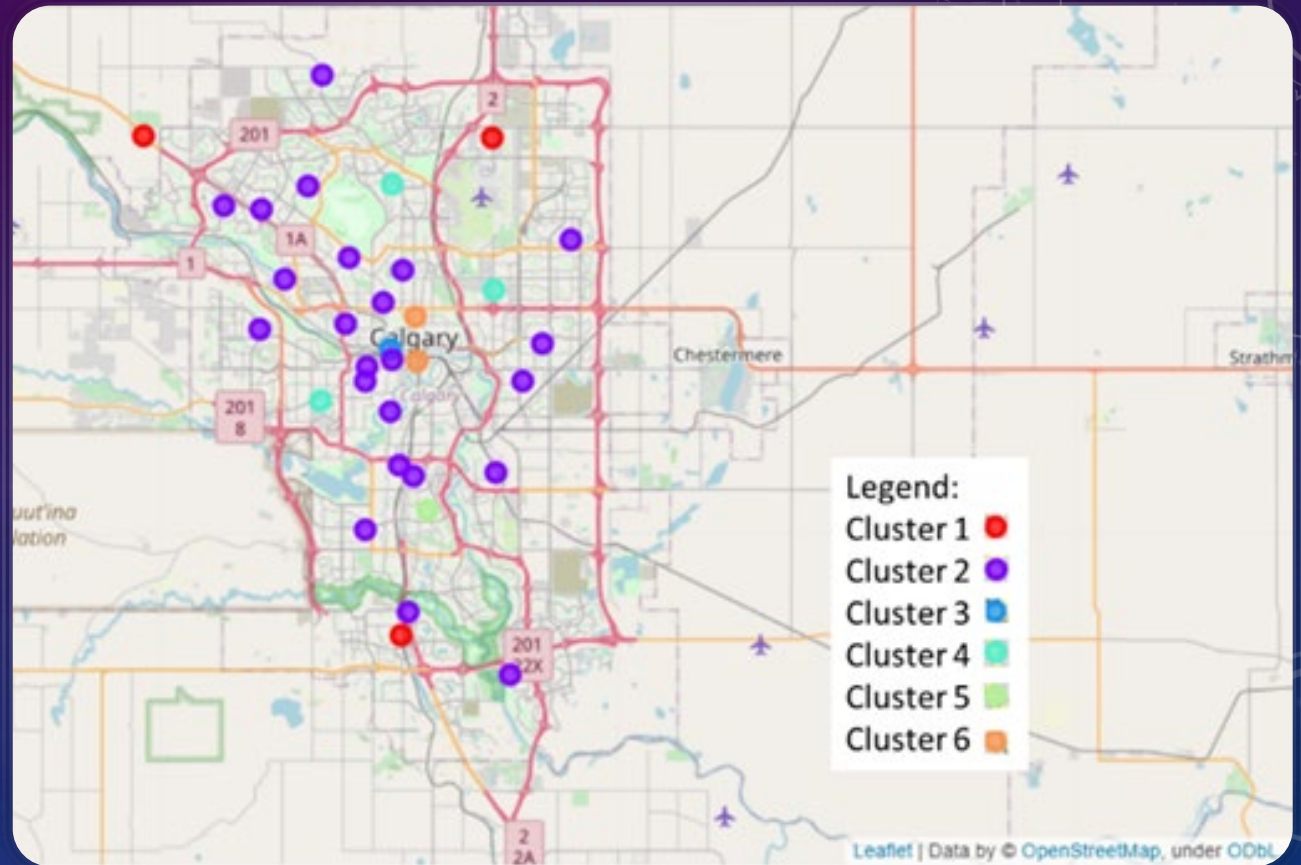
Cluster 2 : Vietnamese

Cluster 3 : American

Cluster 4 : Vietnamese

Cluster 5 : American

Cluster 6 : Asian



# CONCLUSIONS

- Vietnamese cuisine is the top trend in both Toronto and Calgary
  - prospective investors and/or restaurateurs should consider other cuisine types
- Urban planners and property developers will find more opportunities in Calgary for initiating new and improving current developments
- Further refinements are required to improve the methodology and obtain more nuanced and accurate analytics.