Selecting the location for a brand new Fashion Boutiques in high traffic areas in Seattle, Washington, USA

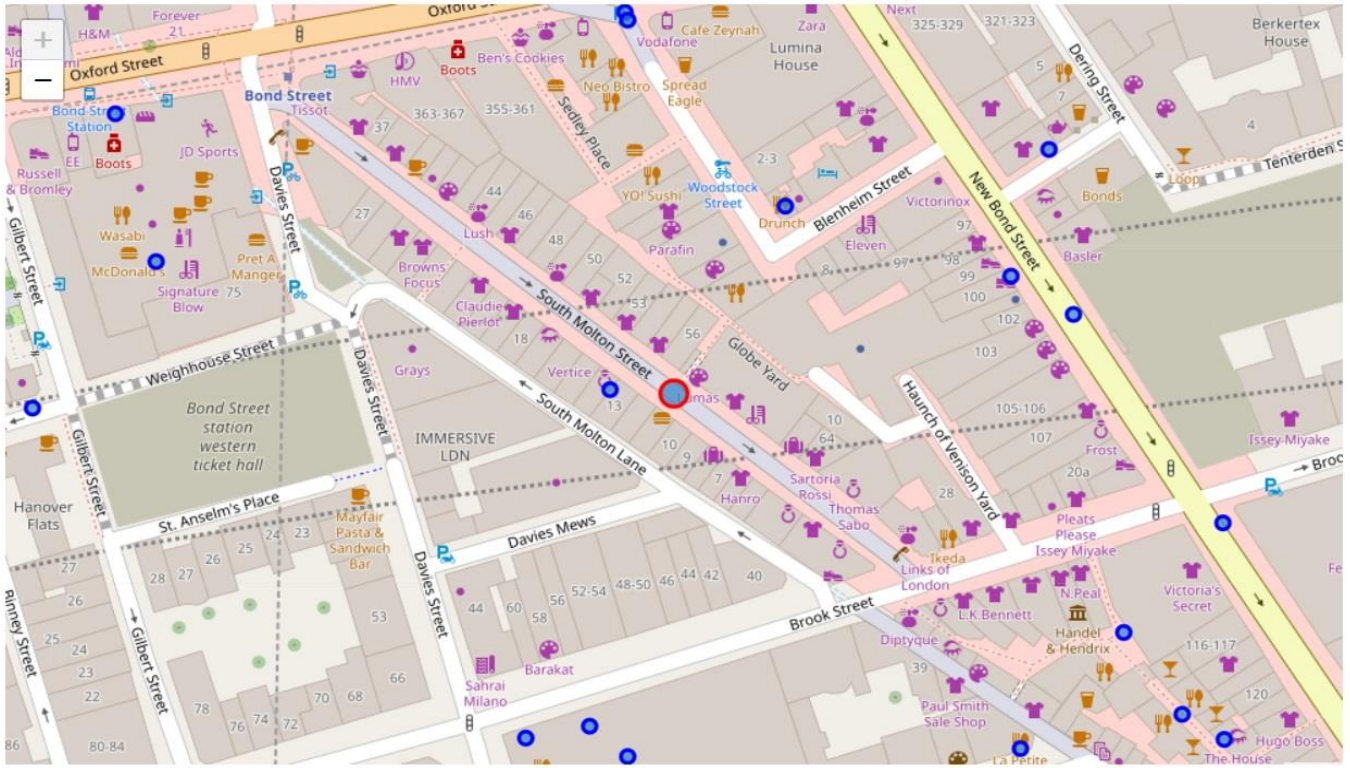
Eric Longomo

1. Aims and Objectives

- The aim of this work is to assist a a very successful Fashion Store company named Browns Fashion in making a data-driven decisions on the new location –more suitable for a new store in Seattle.
  - This exploratory work constitutes a major part of their decision-making process.
  - Then the company will internally conduct ground qualitative analyses of Seattle's neighbourhoods once the results of my analysis and report are reviewed.

2. Criteria for the new store selection

❖ Replication of the success the store experienced in Mayfair London by select an area in Seattle similar to the surrounding of their London Store as seen in picture below.



❖ **Figure 1: Browns Fashion Boutique in Mayfair London and surrounding venues using Folium**

2. Criteria for the new store selection

- The new store has to have in its neighborhoods at least the following 3 top venues highlighted in red. These venues represents the most common businesses in its surrounding in Mayfair London.
  - Art Gallery
  - Clothing Store
  - Italian Restaurant
  - Coffee Shop
  - Boutique
  - Juice Bar
  - French Restaurant
  - Hotel
  - Café
  - Cosmetics Shop

3. Methodology/Data Analysis Workflow

- Data manipulation and analysis to derive subsets of the initial data

- Identification of the high traffic areas using:
  - Segmentation of the neighbourhood through k-means clustering
  - Data visualisation of the clustered neighbourhood --using various mapping libraries including Geopy and folium libraries in Python (folium)

- Selection of the best neighbourhood using venues frequency with the help of Violin plot library in python Results

4. Data

	District	Neighbourhood	Latitude	Longitude
0	Ballard	Adams	47.565271	-122.279546
1	Ballard	Loyal Heights	47.688709	-122.392907
2	Ballard	Sunset Hill	47.675217	-122.398448
3	Ballard	West Woodland	47.675973	-122.347499
4	Ballard	Whittier Heights	47.683297	-122.371449
5	Beacon Hill	Holly Park	47.541650	-122.291929
6	Beacon Hill	North Beacon Hill	47.577586	-122.309960
7	Beacon Hill	South Beacon Hill	47.577586	-122.309960
8	Capitol Hill	Broadway	47.606293	-122.320794
9	Capitol Hill	Madison Park	47.635930	-122.280196
10	Capitol Hill	Montlake	47.641408	-122.303044

Figure 2: Showing the DataFrame containing Seattle neighbourhood, Districts and geospatial coordinates.

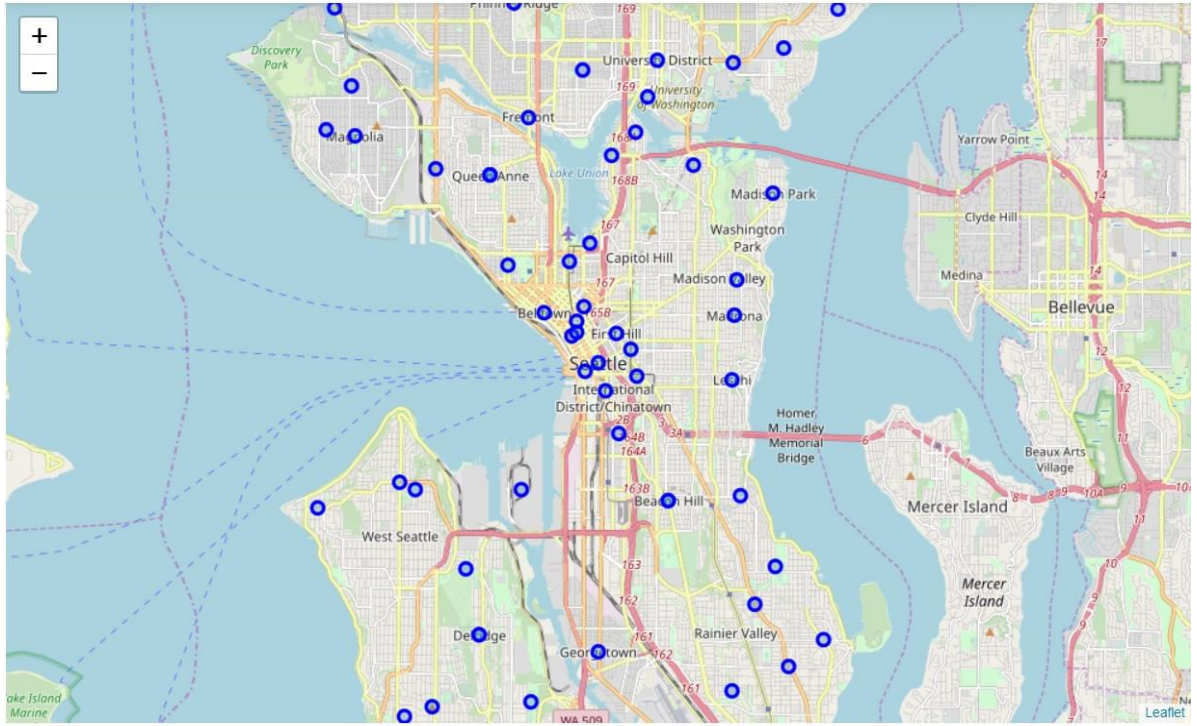


Figure 2: Showing Geospatial Map of Seattle neighbourhood and Districts

5. Exploratory Analysis (K-Means Clustering)

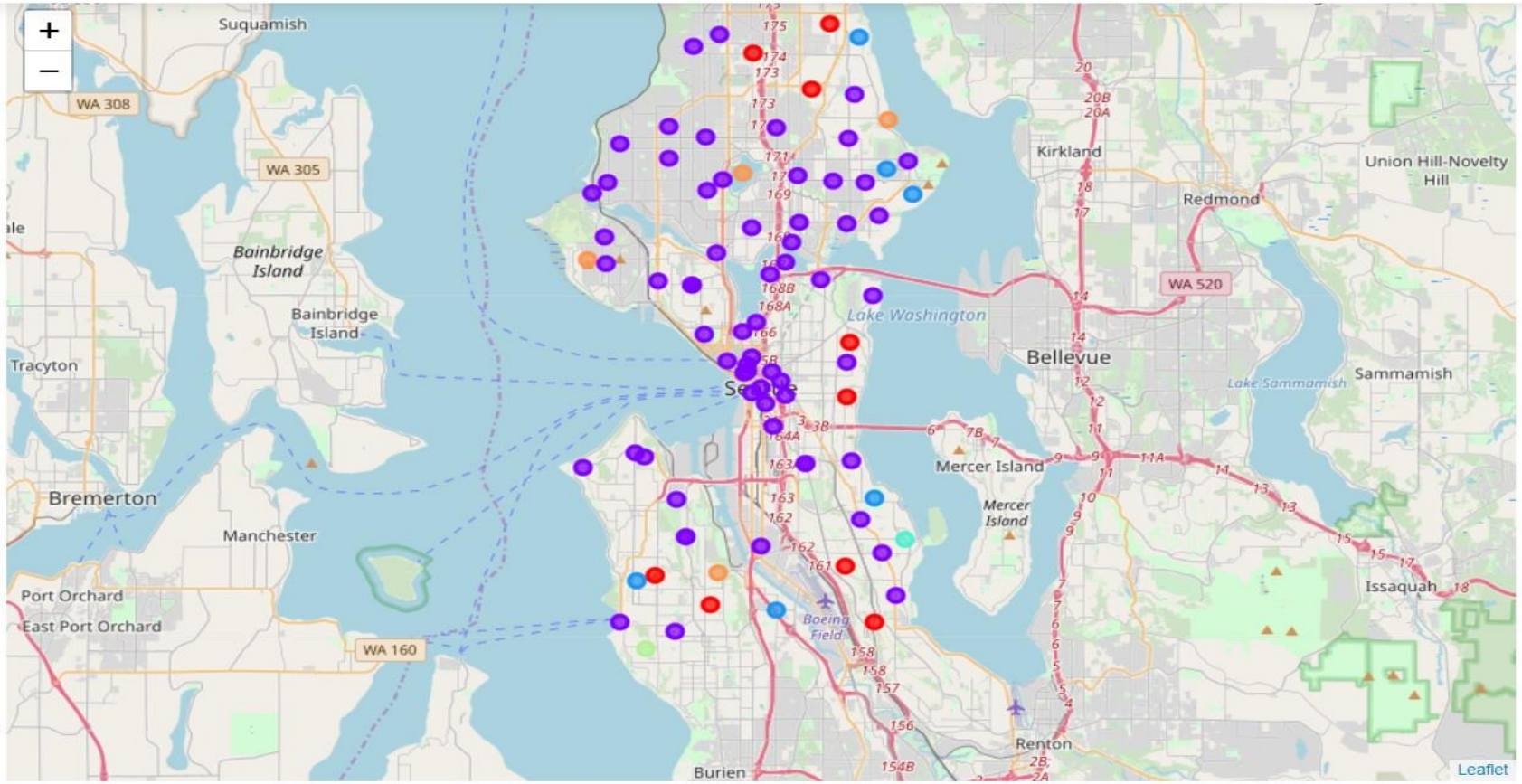
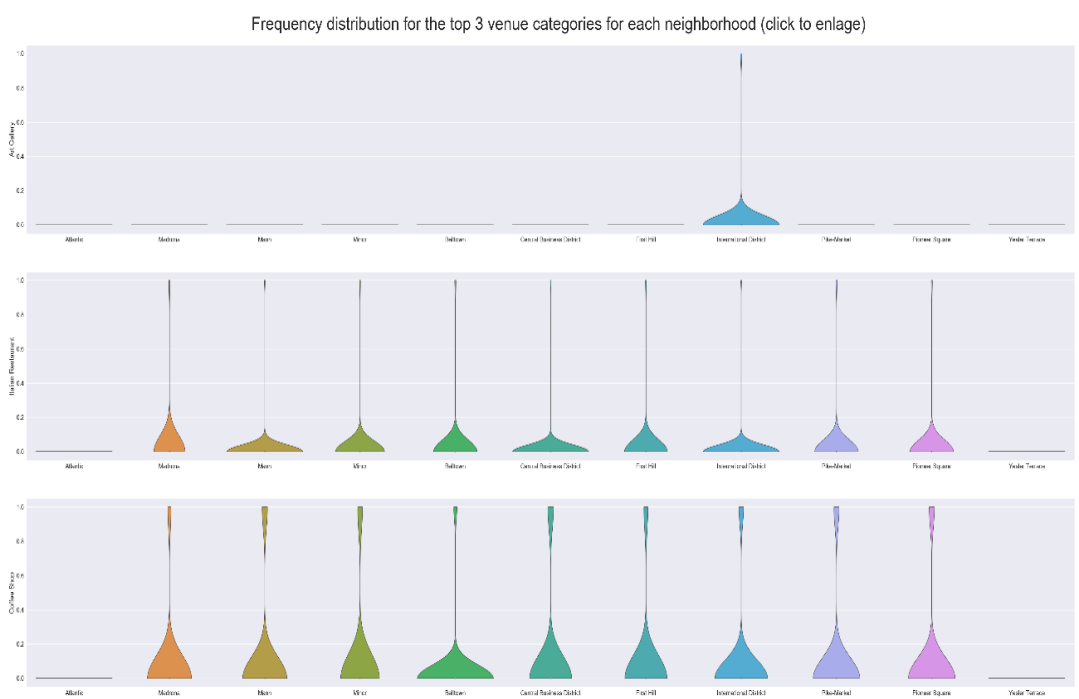


Figure 2: Showing Seattle neighbourhood being group in 6 different clusters based on venues found in them. Cluster 2 was selected for detailed analysis.

6. Results



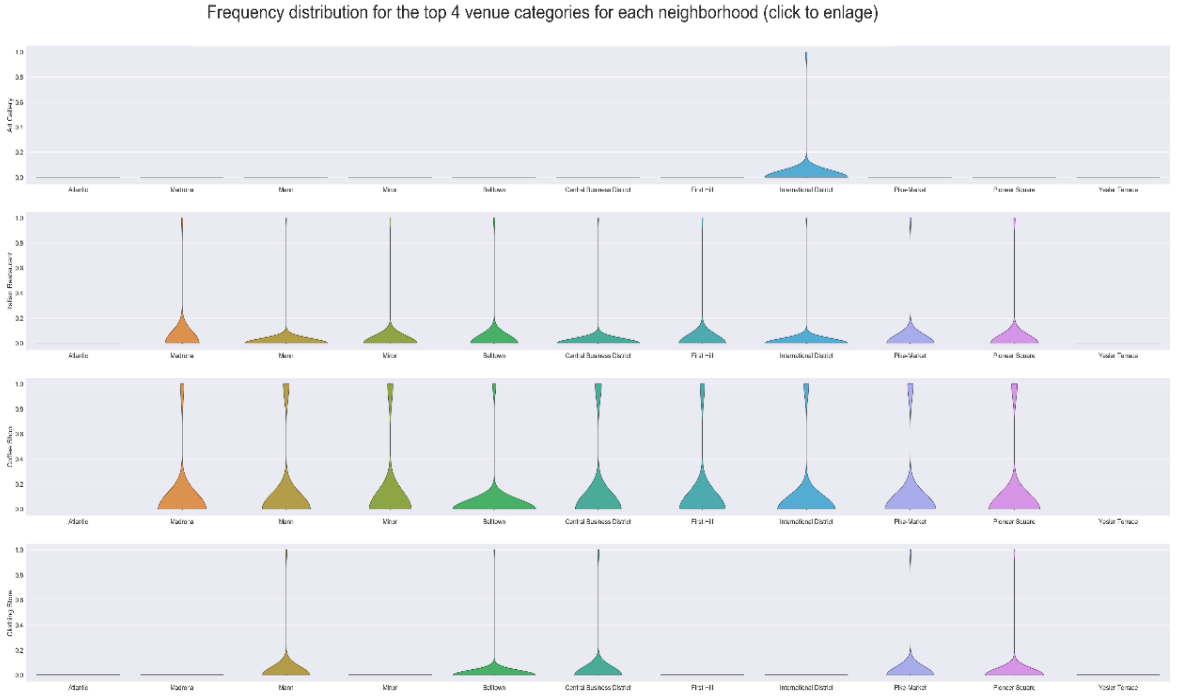


Figure 2: Showing the best neighbourhood that meets all the 3 set criteria, 4th from right-to-left in the above 2 plots (**The international District**)

6. Results

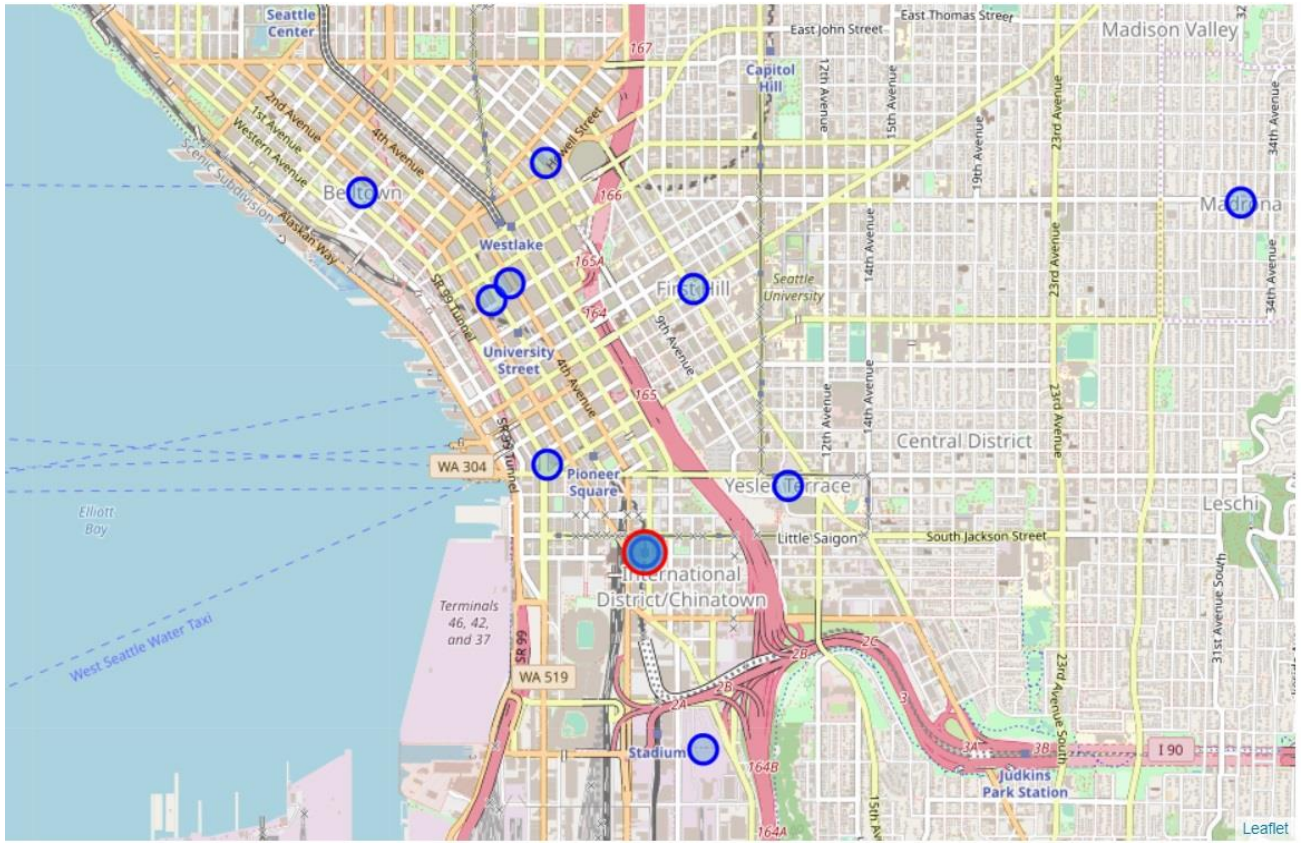


Figure 2: Showing the **The international District** --the neighbourhood that meets all the 3 set criteria, circled in red on the geospatial map of Seattle

7. Conclusion

❖**Inferences was made to help make a new location recommendation for a New Browns Fashion Boutique in Seattle Wa.**

❖**The work steered a course for Browns Fashion Boutique's Decision Makers to select the best possible location for their new store in Seattle, WA.**

- ❑Based on the criteria of being in neighbourhoods that has at least an Art Gallery, an Italian restaurant and a Coffee Shop.
- ❑This problem could be reinforced by expanding the number of venues in.

- **K-means clustering was used to first group neighbourhoods from the entire Seattle, WA and then select a cluster that met most of the criteria for details analysis.**
- **Violin Plot was used to visualise the best location of the store.**
- **The international District neighbourhood in Seattle was selected as the best location as it met all the criteria and no competition was in proximity.**