

# Where is the Bestplace for new restaurant in SEOUL, Korea?

IBM Applied Data Science Capstone Project  
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# Introduction

- SEOUL is the biggest city in KOREA
- These days, the number of foreign tourists visiting Seoul is increasing every year.
- There are a growing number of people looking for not only
- Korean food but also various world foods.
- Find the best place to open a new restaurant by data analysis.

# Business Problem

- Mr ABC is a very talented Turkish chef
- He is looking for a place opted in his new Turkish restaurant
- He want to
  - Find place that restaurants in various categories is crowded by customers, visitors.
  - Find place that customers can access by public transportation like subway, or bus

# Data

- GEO-JSON Data about 25 sub-areas.
- SubWay Station Data
- In/Out population Data
- Location Data
- Foursquare Venue Data
- Venue Name, ID, Location, Category, Likes

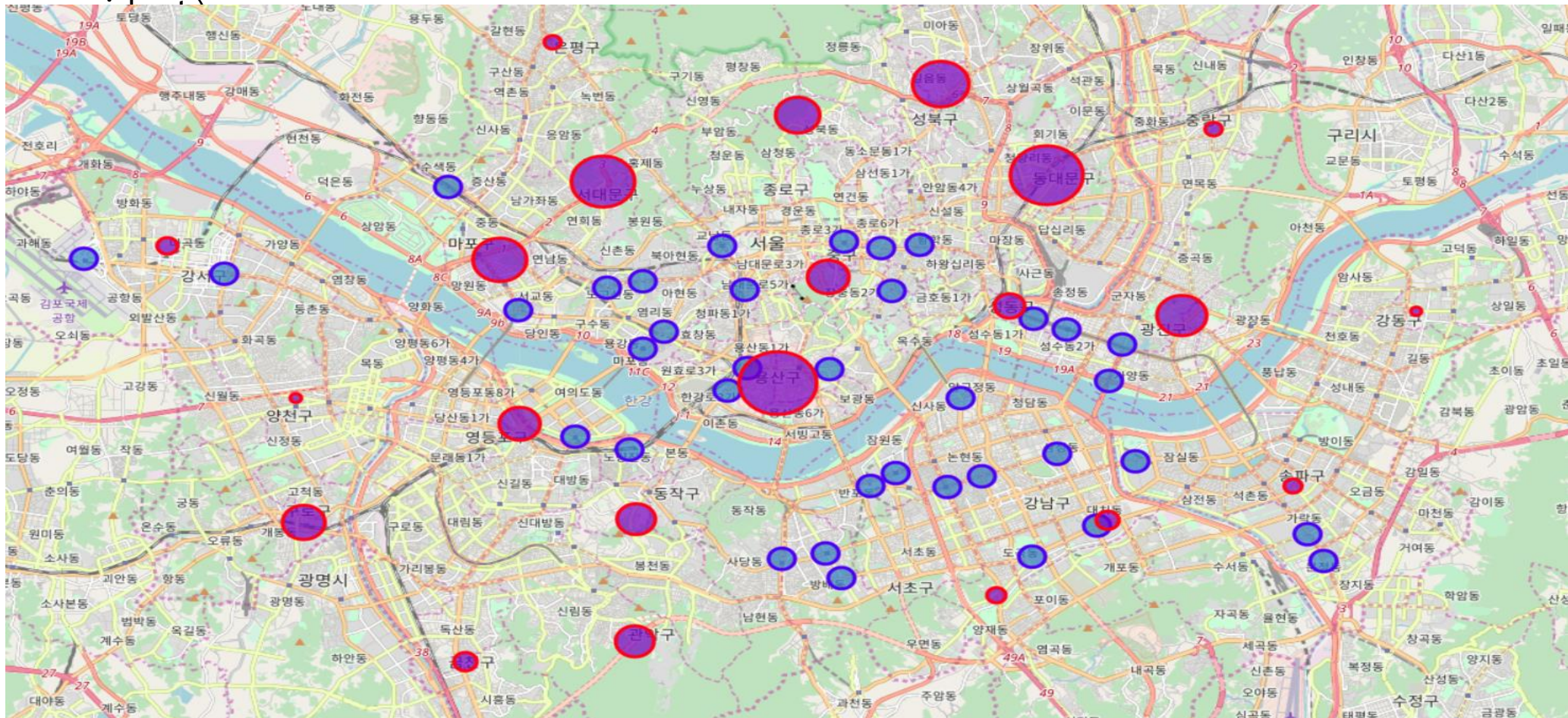
Data Source : <https://data.seoul.go.kr/>

# Feature selection

- subway station In/Out customer population
  - $IN\_AM\_OUT\_DINNER\_RATIO : IN\_AM / OUT\_DINNER * 100 (\%)$  - if this ratio is below 100 %, the customer counts in dinner time are more than customer counts in AM(get to work) time using the subway station
  - $INOUT\_R\_NIGHT : IN\_NIGHT / OUT\_NIGHT * 100 (\%)$  - if this ratio is over 100 %, the customer counts who go back home after dinner in night time are more than customer counts go out the subway station who lived in nearby station
  - $OUT\_DINNER\_IN\_NIGHT\_RATIO : OUT\_DINNER / IN\_NIGHT * 100 (\%)$  - This ratio provide additional information about how much the customers who go out the station in dinner time go back in Night time.

# Exploratory Data Analysis

- BLUE : selected subway station by crowded population in dinner time
- RED : Foreign Resident Count (The size of the circle is proportional to the number of foreign



# Analysis

- The Yongsan-gu area was chosen as the best place for the new restaurant through data analysis.
- Reason
  - 3 selected subway Station
  - TOP 1 foregin resident count.
- Turkish Restaurant is not yet popluar nearby Itaewon Station Area.

station	Itaewon
1st Most Common Venue	Coffee Shop
2nd Most Common Venue	Korean Restaurant
3rd Most Common Venue	Lounge
4th Most Common Venue	Bar
5th Most Common Venue	Pizza Place
6th Most Common Venue	Café
7th Most Common Venue	Vegetarian / Vegan Restaurant
8th Most Common Venue	BBQ Joint
9th Most Common Venue	Indian Restaurant
10th Most Common Venue	Salad Place



# Conclusion

- The Yongsan-gu area was chosen as the best place for the new restaurant through data analysis.
  - 3 selected subway Station
  - TOP 1 foregin resident count.
- Turkish Restaurant is not yet popluar nearby Itaewon Station Area.
- Itaewon Station is the best place of new MR. ABC's Turkish restaurant because it is a place where locals and foreigners come to enjoy food from various countries.

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# Future directions

- I expect to further develop the solution by further analyzing the real estate rental data or customer assessments of actual competitive restaurants. If possible, the analysis will be expanded to various areas including Hongdaehapjeong, Seongsu-dong, Gangnam, Cheongdam, and Samsung, which have recently emerged as hot places outside Yongsan