

Course: IBM Applied Data Science Capstone

Week: 4

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## **Project: Public Wifi Distribution in Seoul, Korea**

### **Introduction**

As we are in the Internet society, accessibility of Wifi network is becoming one of the top priorities in our life. For travelers, accessibility of Free Wifi (a public Wifi without any charge to user) can be also an important part of visiting another country. Seoul, the capital city of South Korea, is one of the main cities which has full internet infrastructure so visitors from other countries did not have major concern on internet connectivity. However, there can be some discrepancies in the distribution of Free Wifi facility between district ('-gu') in Seoul

So, I researched geographic distribution of Free Wifi spots in overall Seoul and arranged basic differences between each district

### **Data obtained**

The data we obtained is from "Seoul Open Data Site" (<https://data.seoul.go.kr>) and I downloaded CSV file named "Geographical data of public Wifi spot in Seoul"

(URL: <https://data.seoul.go.kr/dataList/OA-1218/S/1/datasetView.do>)

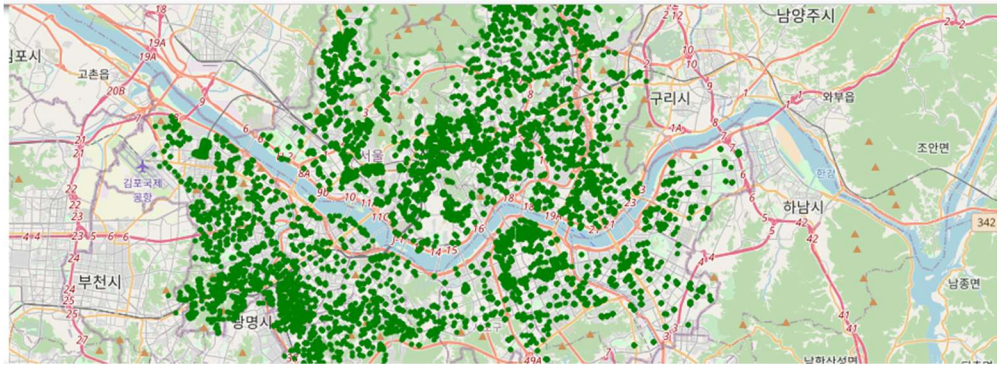
Because the data is written Korean and it is not readable in non "UTF-8" code page, I translated all contents to English and deleted unnecessary data ("address in detail") not used for analysis

### **Methodology**

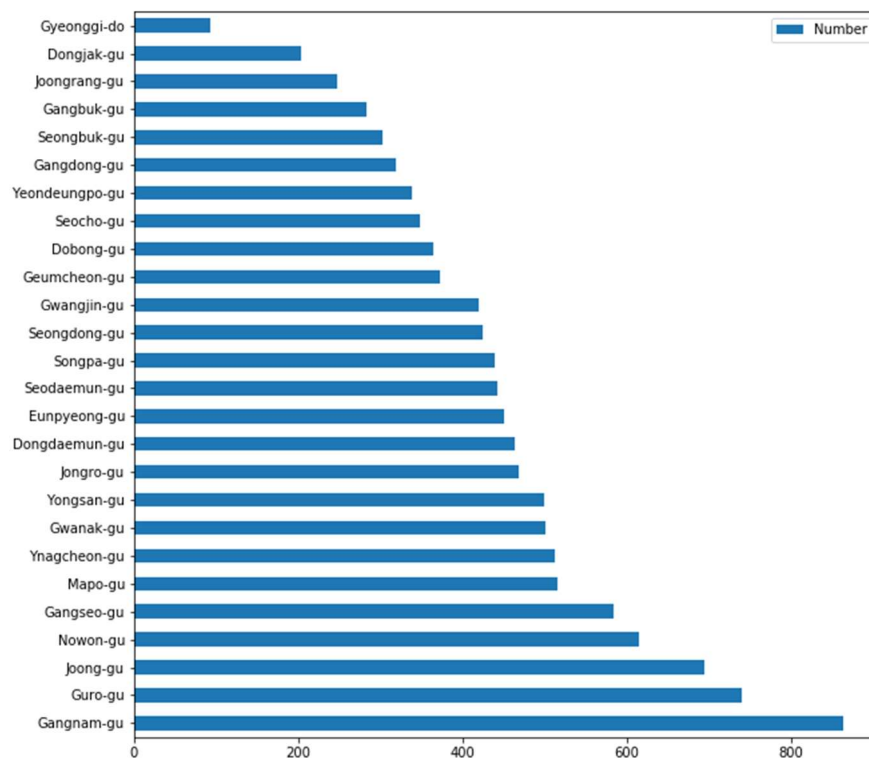
I used geographic data from geopy and mapped each location of public Wifi station based on its longitude and latitude. (as green dot). After that, I figured out the number of public Wifi station for each district in Seoul

### **Result**

As the geographic data shown, there was gap in the distribution of Wifi based on the part in seoul.



To figure out how much there is difference in the number of public Wifi, I figured a horizontal graph. As the graph shown, the Gangnam-Gu area has the most number of public Wifi. "Guro-gu" and "Joong-gu" in which most of IT-, Financial companies are located are on the high rank in number of public Wifi. Comparing to them, residential area like "Joonggrang-gu" or "Dongjak-gu" has smaller number of public Wifi spots.



## Discussion

This research showed that the type of district has affected on the number of "public Wifi". Also, the research showed that the district which is boomed with business people are mostly convenient in using public Wifi. However, as a limitation, we need to have further study to see the correlation between the number and type of company in each district and the number of public Wifi.

## Link

Notebook (in Github)

[https://github.com/seo307/datascience\\_capstone/blob/master/wk4\\_seoul\\_wifi\\_distribution.ipynb](https://github.com/seo307/datascience_capstone/blob/master/wk4_seoul_wifi_distribution.ipynb)

Data (Distribution of public Wifi in Seoul)

<https://data.seoul.go.kr/dataList/OA-1218/S/1/datasetView.do>