

# Capstone Project - The Battle of Neighbourhoods

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# 1. Introduction

- ▶ This project designed for me (the author) personally
- ▶ Relocating to Shanghai on Feb 2021
- ▶ Take this capstone project as an opportunity to explore Shanghai in advance
- ▶ Explore Shanghai (area where I will be settling down) following the criteria below:
  - Find an area near to metro station
  - Find an area near to hospital (health is very important during this pandemic!)
- ▶ Narrow down to one or two places - then explore the neighbourhoods to find the most popular Chinese restaurant

## 2. Data

- ▶ A list of metro station in Shanghai (from Wikipedia)
- ▶ Pre-processed, cleaned and save as a csv file
- ▶ A list of hospital in Shanghai
- ▶ Pre-processed, cleaned and save a csv file
- ▶ Import to notebook

# 3. Methodology & Results

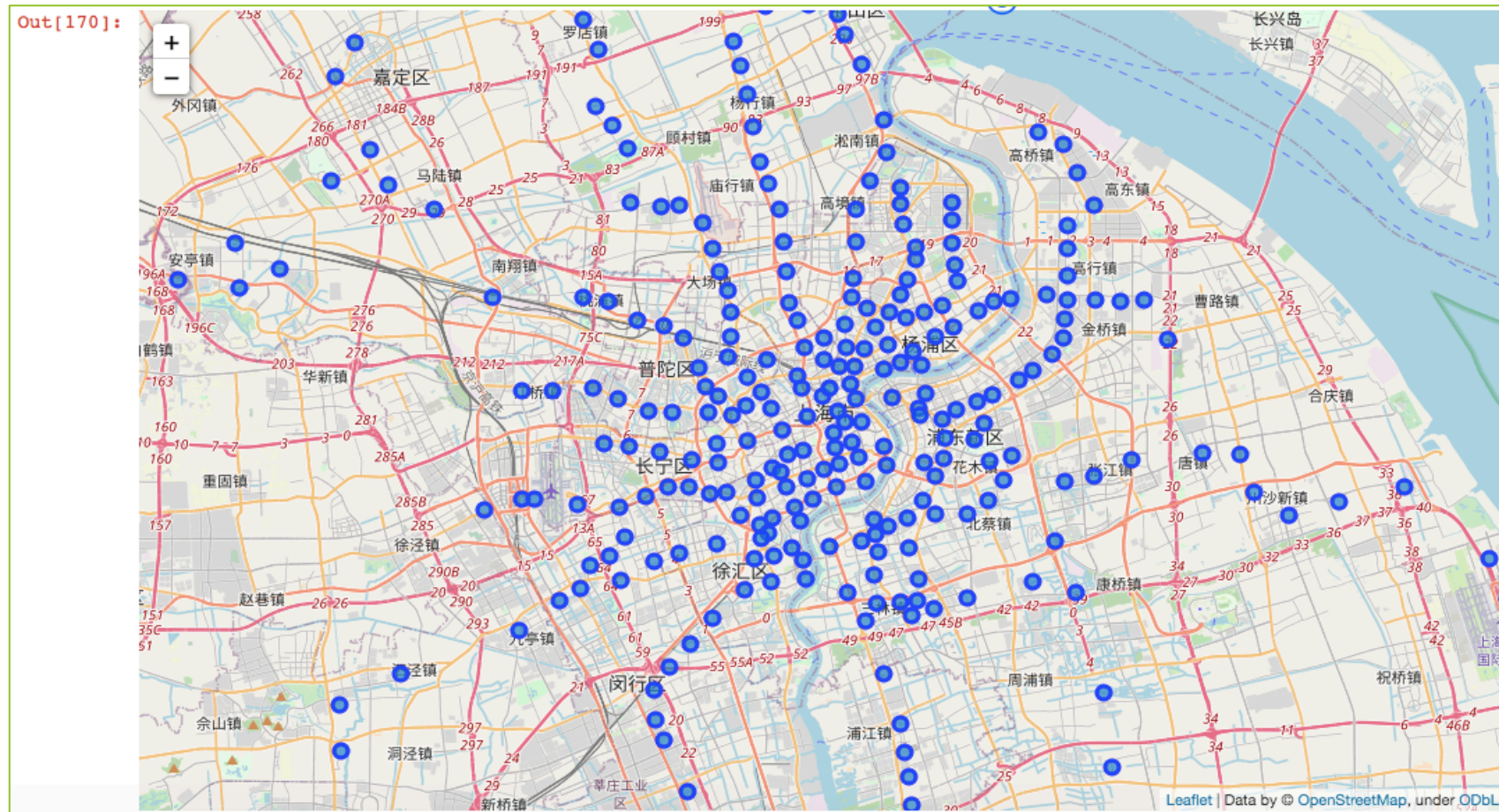
## Criteria 1 - Near to metro station

Service Routes <sup>[7]</sup>		Station Name <sup>[8]</sup>		Opened	Location	Platform Level	Type of Platform <sup>[9]</sup>	Transfers <sup>[10]</sup>
		English	Chinese (S)					
<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>	Xinzhuang	莘庄	28 December 1996 <sup>[11]</sup>	Minhang	At-grade	Side platform	 5 Jinshan
	<ul style="list-style-type: none"><li>•</li></ul>	Waihuanlu	外环路			At-grade	Side platform	 Xinzhuang
	<ul style="list-style-type: none"><li>•</li></ul>	Lianhua Road	莲花路			At-grade	Side platform	
<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>	Jinjiang Park	锦江乐园	28 May 1993 (former) <sup>[12][13]</sup> 12 December 1996 (current) <sup>[11]</sup>		At-grade	Side platform	
<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>	Shanghai South Railway Station	上海南站	28 May 1993 (former) <sup>[12][13]</sup> 30 October 2004 (current) <sup>[11]</sup>		Underground	Island platform	 3 Jinshan <sup>[a]</sup>  Shanghaiainan <sup>[b]</sup>

Out[168]:

	Metro Station	Station Name	Line	Latitude	Longitude
0	七宝	Qibao	Line 9	31.155365	121.348824
1	三林	Sanlin	Line 11	31.143311	121.512324
2	三林东	Sanlin East	Line 11	31.146525	121.523234
3	三门路	Sanmen Road	Line 10	31.313091	121.507995
4	上南路	Shangnan Road	Line 6	31.149112	121.506413

Impose the location of metro station onto a map. Use Folium map function.  
Blue dots are station location.





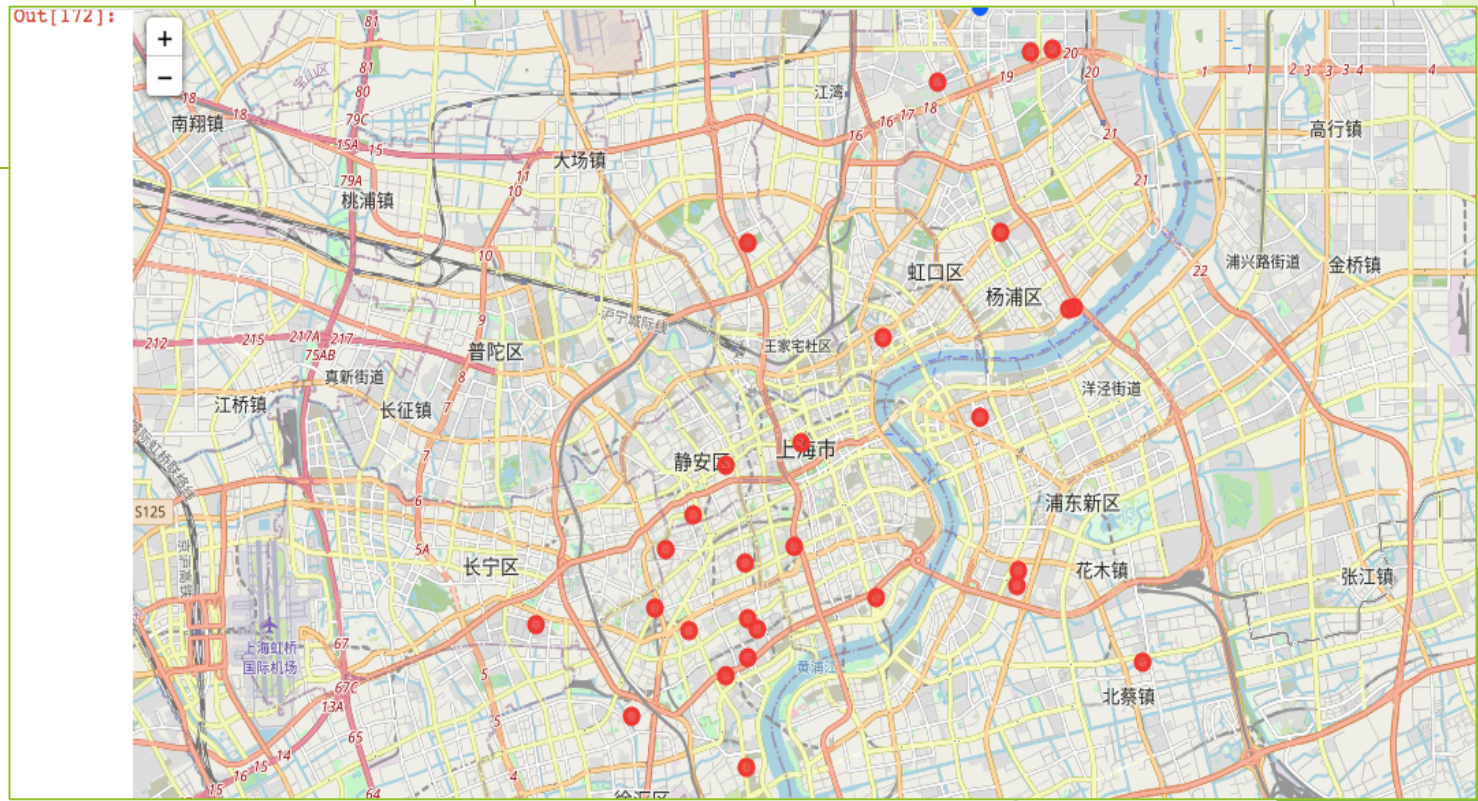
# Criteria 2 - Near to hospital

```
In [171]: body = client_3695b1bee981[REDACTED].get_object(Bucket='courseraweek9capstoneproject-donotdelete-pr-gclzbwd1
nvgigp',Key='SH_Hospital.csv')['Body']
# add missing __iter__ method, so pandas accepts body as file-like object
if not hasattr(body, "__iter__"): body.__iter__ = types.MethodType( __iter__, body )

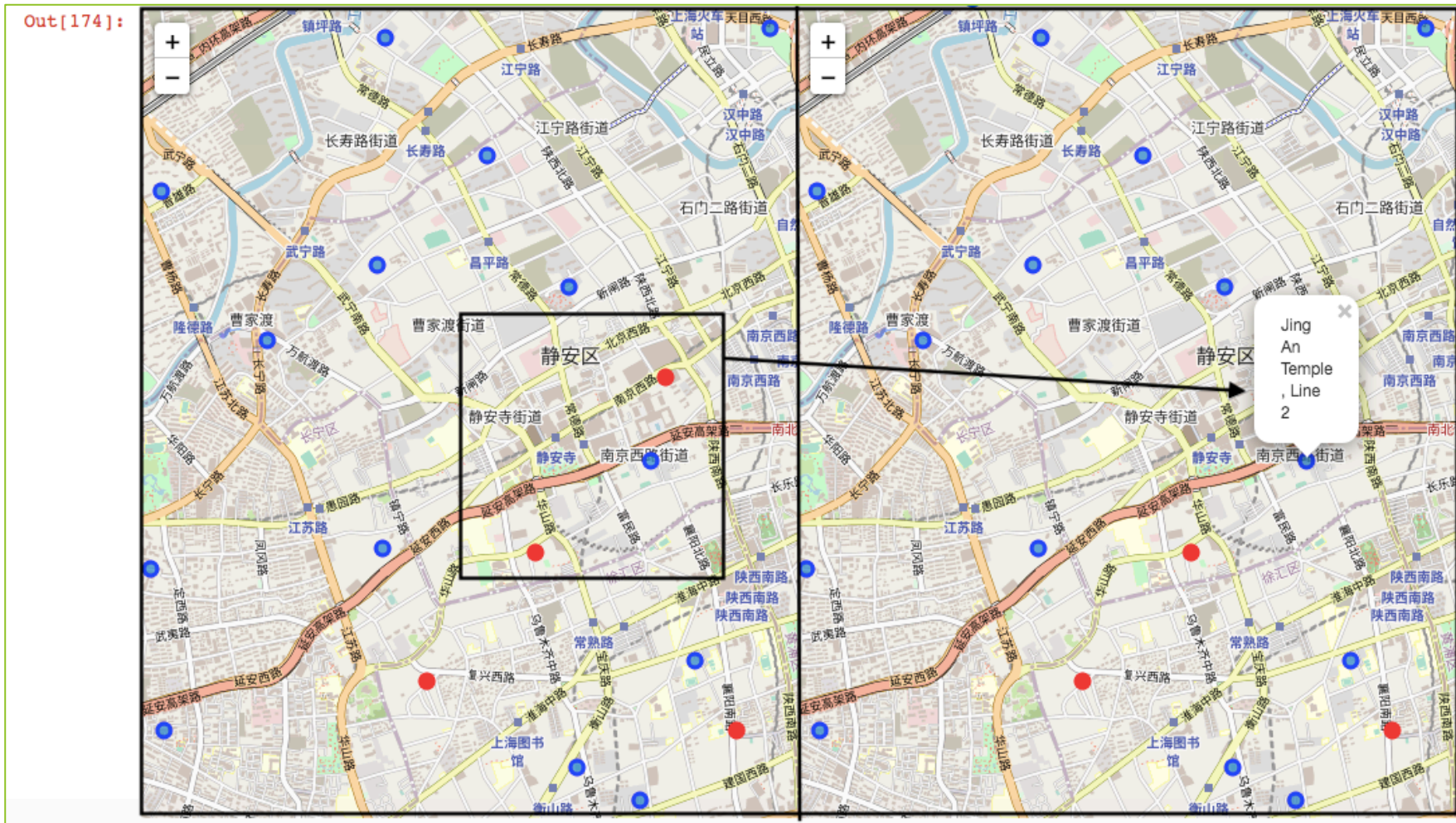
df_data_2 = pd.read_csv(body)
df_data_2.head()
```

Out[171]:

	Hospital	Latitude	Longitude
0	Zhongshan Hospital	31.196552	121.456797
1	Huashan Hospital	31.212233	121.433824
2	Huadong Hospital	31.219098	121.440832
3	Children's Hospital of Fudan University	31.198649	121.454444
4	Red House Hospital (Fudan OBGYN Hospital)	31.259186	121.535251



- Combine 2 maps into one. Select location of interest
- Note that both map have blue and red dots (combined map). A location called “Jing An Temple” is chosen





- Explore Jing An Temple using Foursquare API to find Chinese restaurant
- Results were cleaned and filtered

Out[178]:

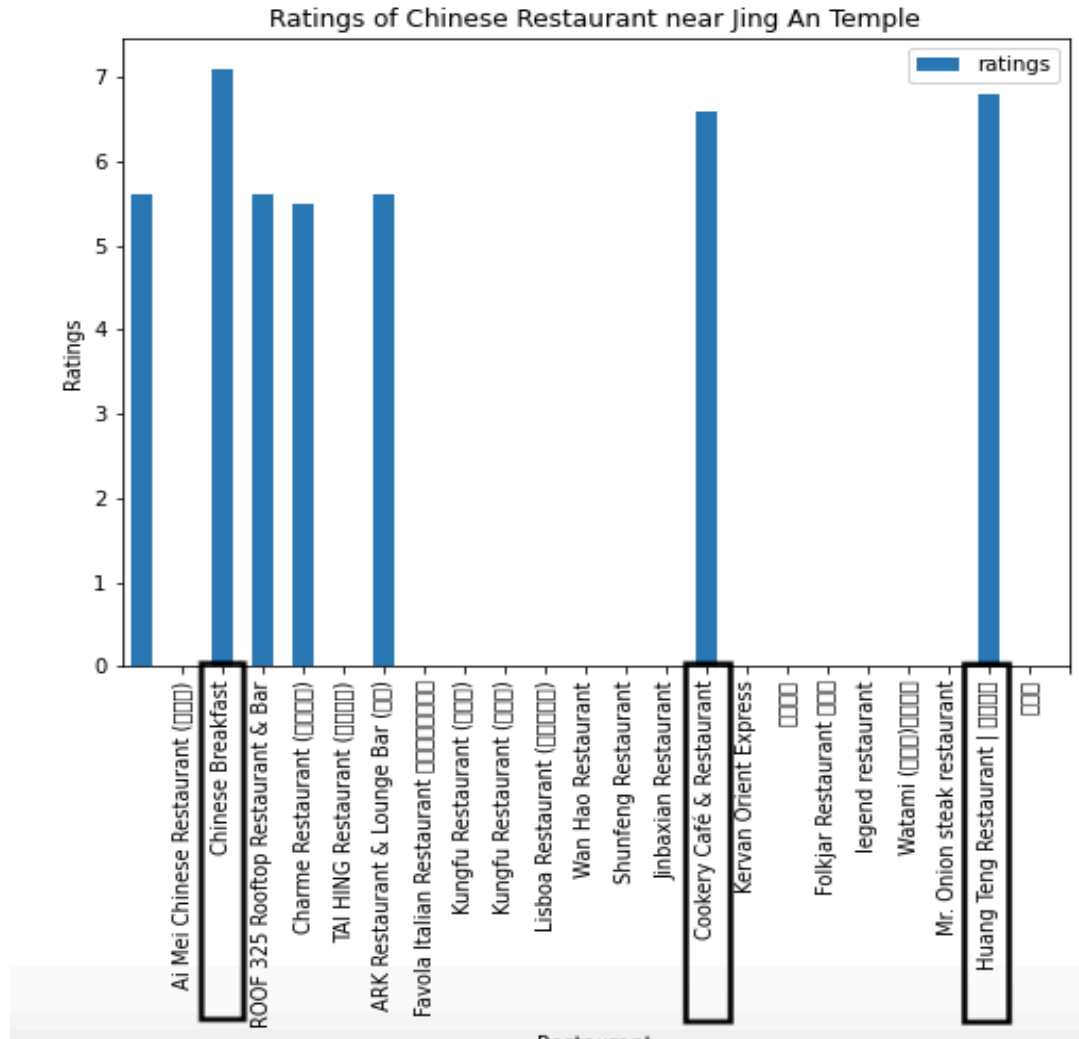
	id	name	categories	referralId	hasPerk	location.address	location.crossStreet	location.l
0	4b0588c2f964a52085d822e3	Ai Mei Chinese Restaurant (艾美轩)	[[{'id': '4bf58dd8d48988d1f5931735', 'name': 'D...'}]]	v-1605341131	False	南京东路789号8F   789 Nanjing Dong Lu	上海皇家艾美酒店内	31.236212
1	5386909f498e49f2a511ee9b	Chinese Breakfast	[[{'id': '4bf58dd8d48988d143941735', 'name': 'B...'}]]	v-1605341131	False	NaN	NaN	31.234238
2	4b0588c1f964a52020d822e3	ROOF 325 Rooftop Restaurant & Bar	[[{'id': '52e81612d48988d1f5931735', 'name': 'M...'}]]			325 Nanjing Xi Lu, 5/F, Shanghai Art Museum   ...	Huangpi Bei Lu   近黄陂北路	31.232848
3	4cde7f61c4f6a35d802bca6c	Charme Restaurant (港丽餐厅)	[[{'id': '52af3a7c3d48988d1f5931735', 'name': 'C...'}]]					

Out[179]:

	name	categories	address	crossStreet	lat	lng
0	Ai Mei Chinese Restaurant (艾美轩)	Dim Sum Restaurant	南京东路789号8F   789 Nanjing Dong Lu	上海皇家艾美酒店内	31.236212	121.470667
1	Chinese Breakfast	Breakfast Spot	NaN	NaN	31.234238	121.463569
2	ROOF 325 Rooftop Restaurant & Bar	Modern European Restaurant	325 Nanjing Xi Lu, 5/F, Shanghai Art Museum   ...	Huangpi Bei Lu   近黄陂北路	31.232848	121.466538



- ▶ Chinese restaurant ranked based on customer rating in Foursquare
- ▶ Visualized by using bar chart



## 4. Discussion

- ▶ Foursquare API is used not only to explore around Jing An Temple, but also to search for popular Chinese restaurant
- ▶ Chinese restaurant with highest customer ranking in Foursquare is ranked and visualized in bar chart
- ▶ Through this project, one observation found is that most of the Chinese restaurant were not given any customer rating. Probably Foursquare is not popular in China or Foursquare user is not active in China

## 5. Conclusion

Criteria	Description	Status
Near to metro station	Location of metro station is imposed to a map	Fulfilled and completed. Metro Station: Jing An Temple
Near to hospital	Location of hospital is imposed to a map (individually and combined).	Fulfilled and completed. Hospital: Huadong Hospital and Huashan Hospital
Explore Chinese restaurant	Foursquare API location data is used to explore Chinese restaurant around	Listed and ranked. Restaurant with the highest ranking: 1 <sup>st</sup> - Chinese Breakfast 2 <sup>nd</sup> - Cookery Café & Restaurant 3 <sup>rd</sup> - Huang Teng Resturant