Capstone Project

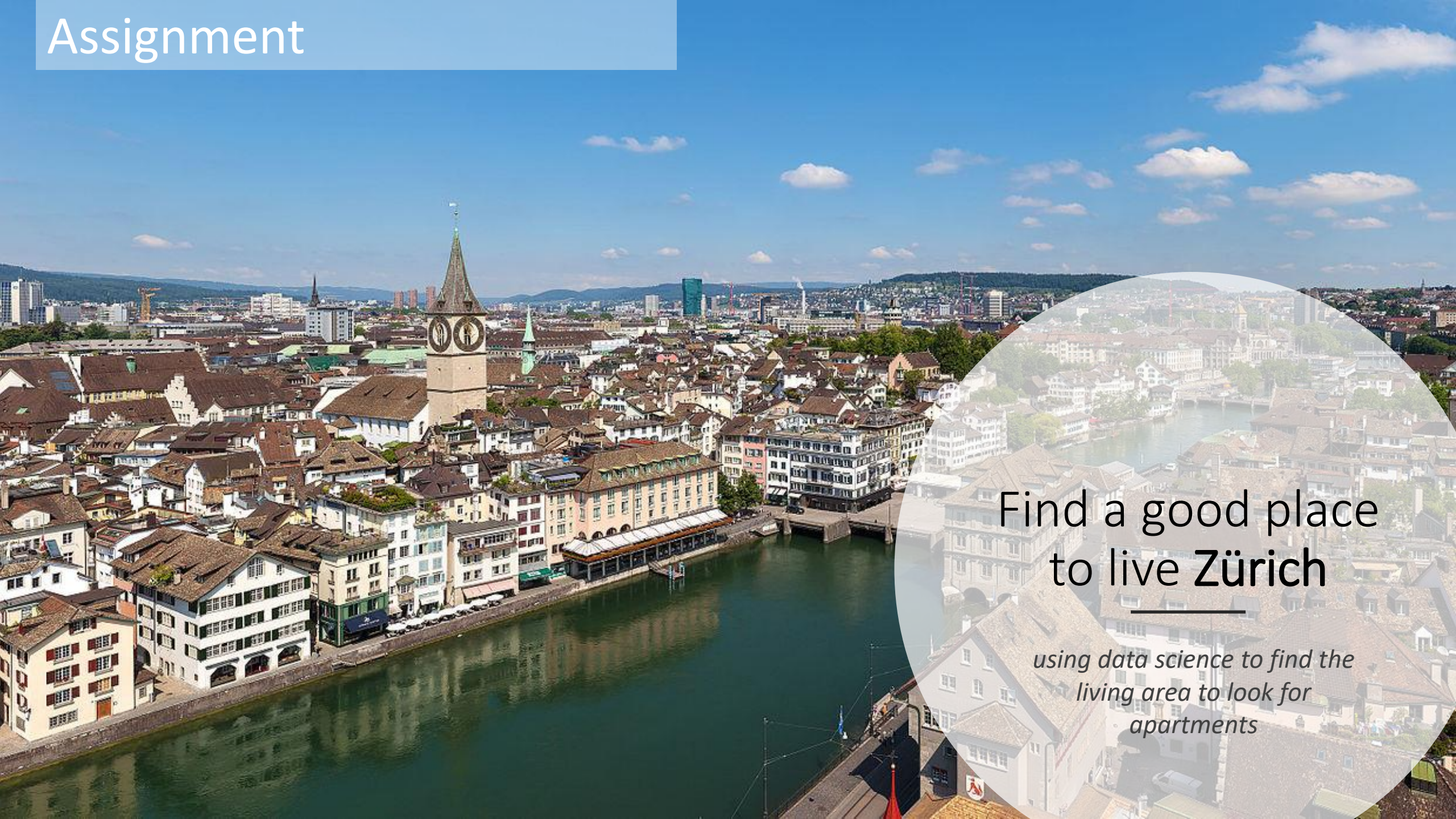
Battle of the Neighborhoods
Part 2

Assignment

Opening an **Asian Tapas Bar in Zürich**

using data science to find the best location for the venue

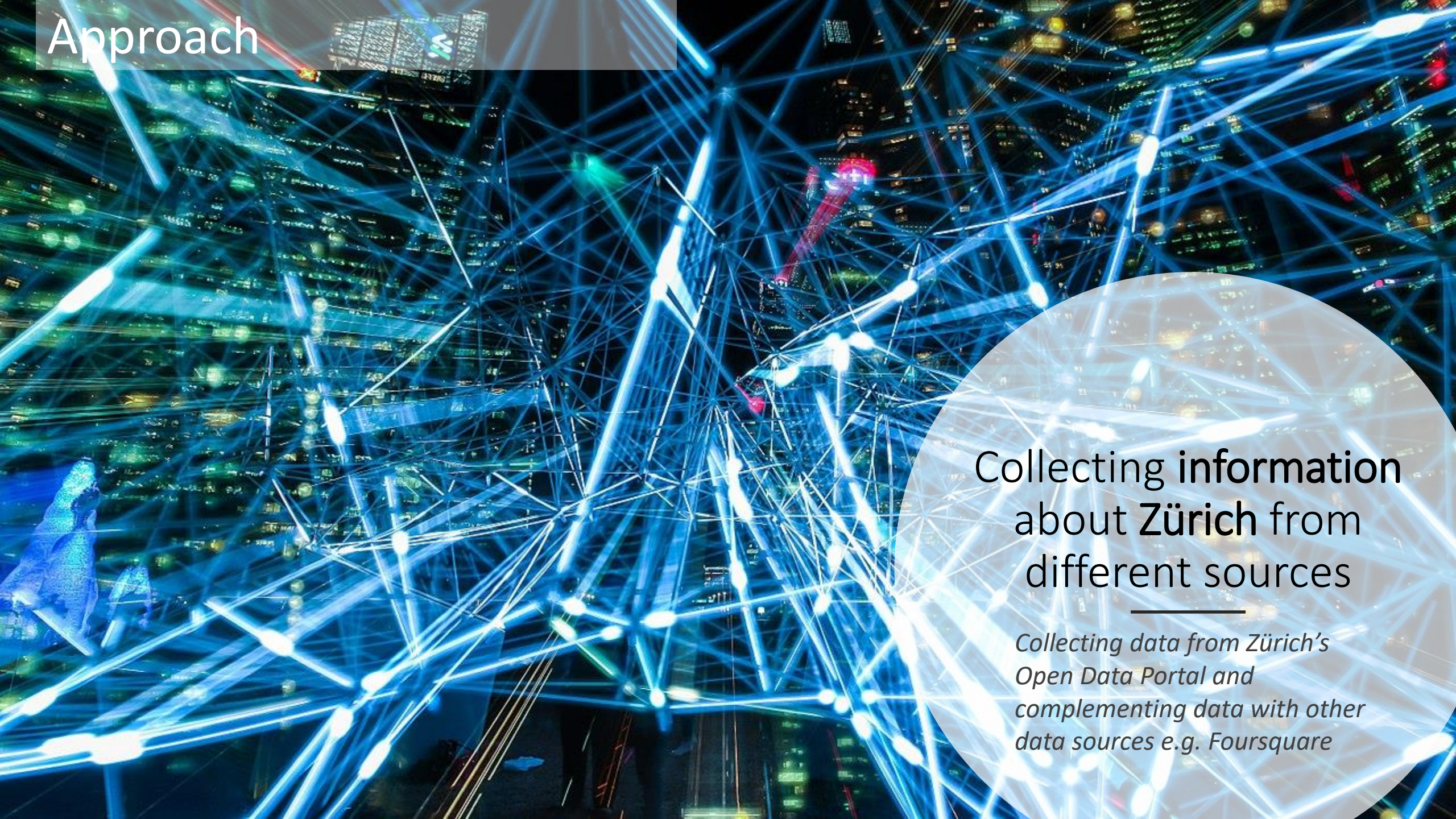
Assignment



Find a good place to live **Zürich**

using data science to find the living area to look for apartments

Approach



Collecting **information** about **Zürich** from different sources

Collecting data from Zürich's Open Data Portal and complementing data with other data sources e.g. Foursquare

Methods applied

Apply **various data science techniques** to analyze collected data

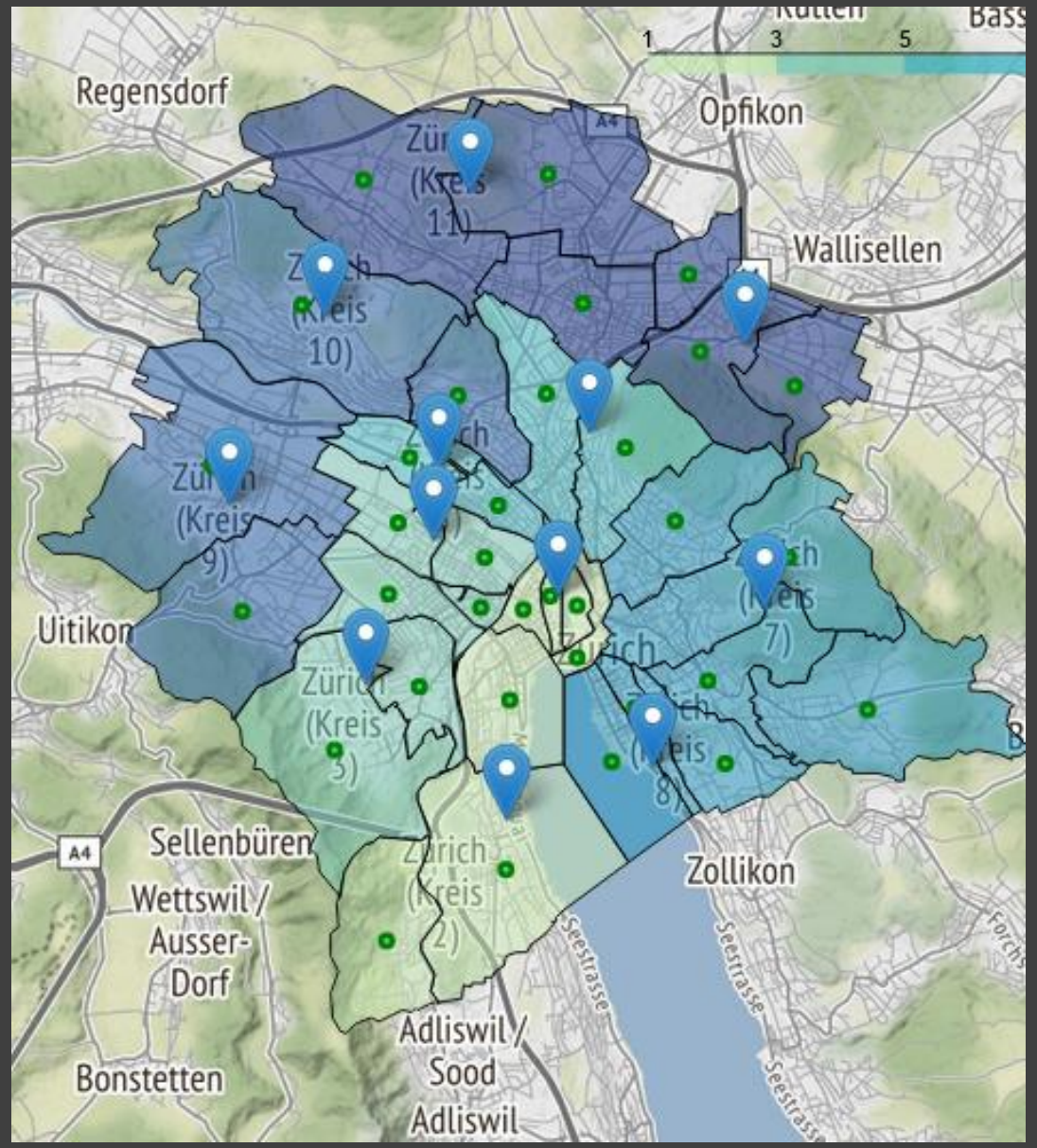
Understand and prepare data to subsequently elaborate the city and prepare input into decision making

Zürich The City - Overview

Zürich is divided into 12 districts (Kreise) and 34 neighborhoods (Quartiere)

Facts and Figures

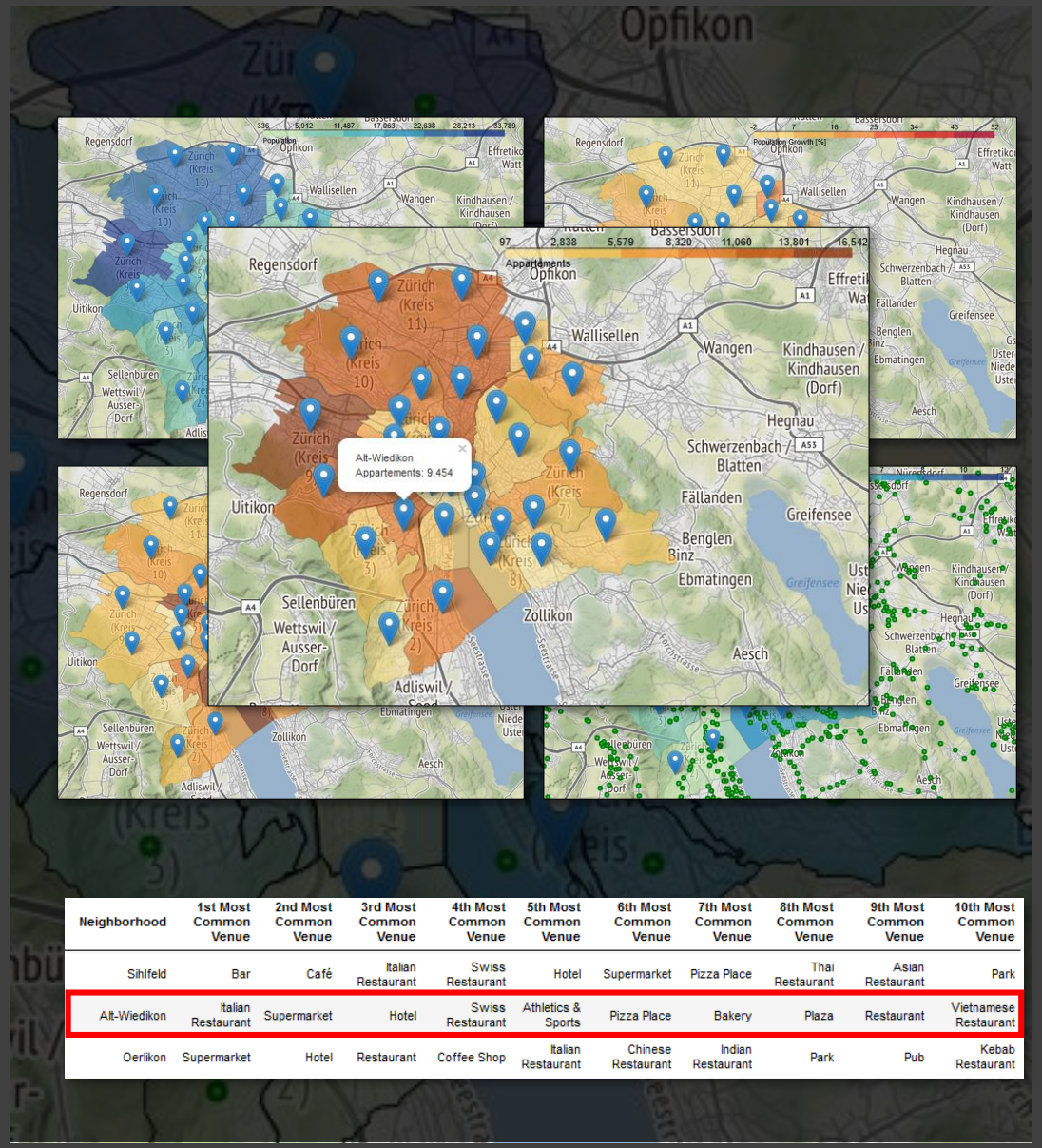
- With 428‘000 (2018) people living in Zürich it is the largest city of Switzerland
- Population density of 4’300 people/km^2
- Hosts about 128 different nationalities living distributed across the city
- Has a highly developed public transport system comprising of approx. 3‘000 stops (only one direction counted)



Insight

“Alt-Wiedikon” a good place to live

- Close to the center of Zürich
- Close to the lake of Zürich
- Moderate population growth of 6%
- Enough living space 9’500 apartments
- Average income area
- Well connected to public transport
- Residential area with restaurants, Supermarkets and Sports facilities

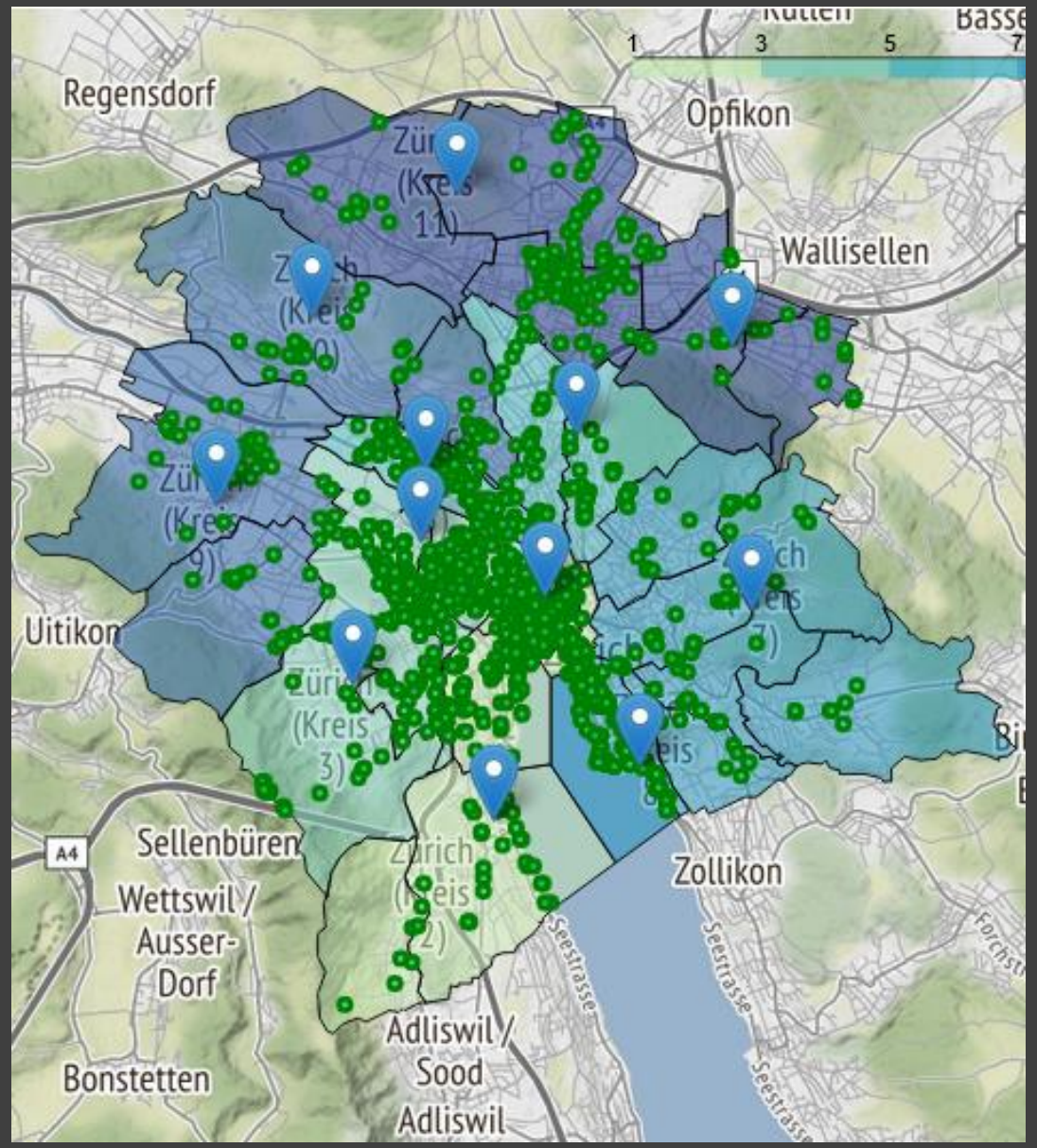


Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Sihlfeld	Bar	Café	Italian Restaurant	Swiss Restaurant	Hotel	Supermarket	Pizza Place	Thai Restaurant	Asian Restaurant	Park
Alt-Wiedikon	Italian Restaurant	Supermarket	Hotel	Swiss Restaurant	Athletics & Sports	Pizza Place	Bakery	Plaza	Restaurant	Vietnamese Restaurant
Oerlikon	Supermarket		Hotel	Restaurant	Coffee Shop	Italian Restaurant	Chinese Restaurant	Indian Restaurant	Park	Pub	Kebab Restaurant

Data Processing and Analysis

Venues across Zürich

- With approx. 2000 venues and more than 200 different venue categories, Zürich compares well with far larger cities like Toronto[1]
- Data visualization make it obvious how venues concentrate in the center of Zürich and are far less around the city

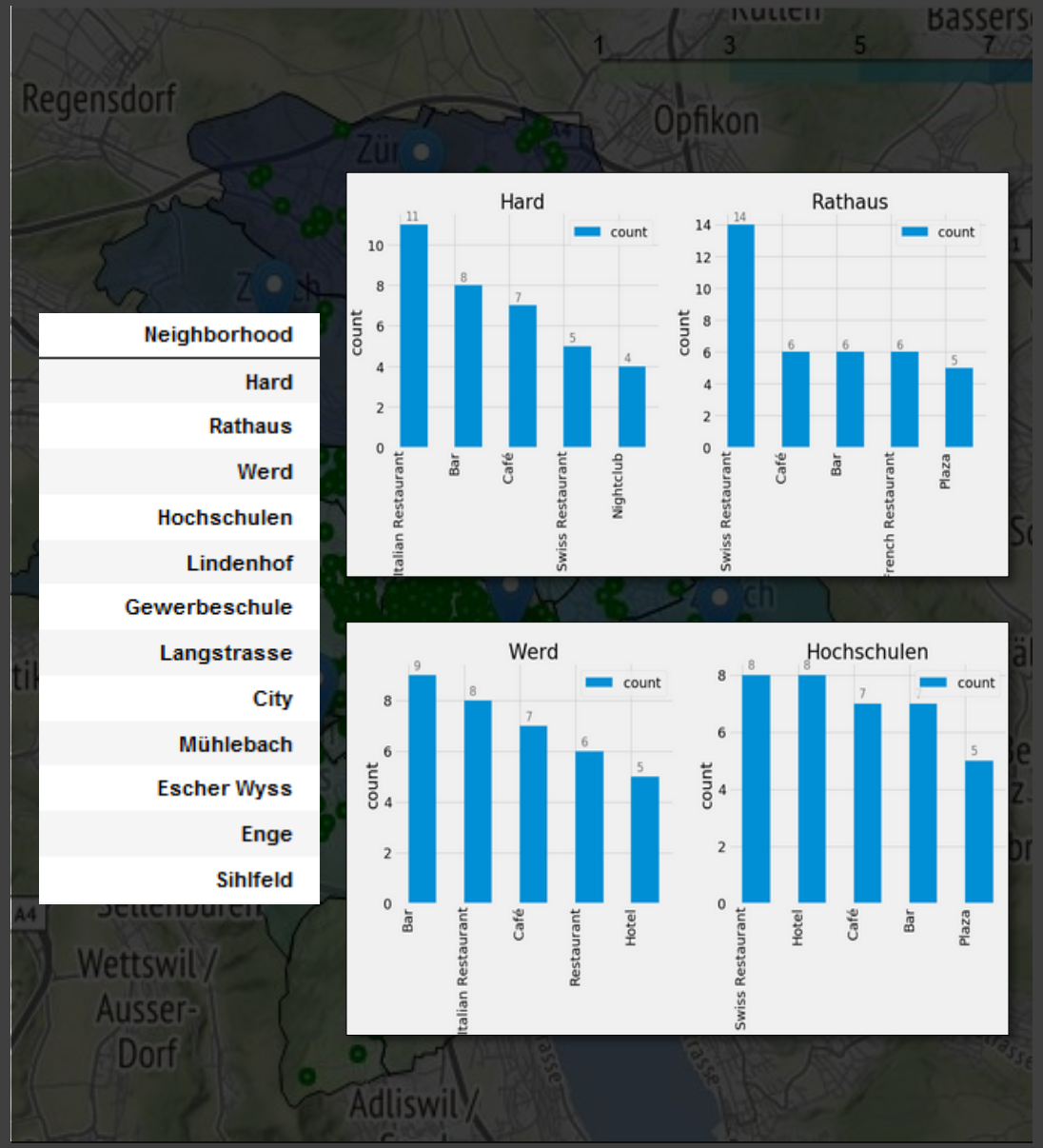


Note:

1) The free access tier of four square seems to limit the number of venues –this might render the number of venues as not accurate – further investigation would be required

Trending Neighborhoods

Neighborhoods have each a unique “fingerprint” of venues, which determines their character and the trends which each neighborhood is representing.



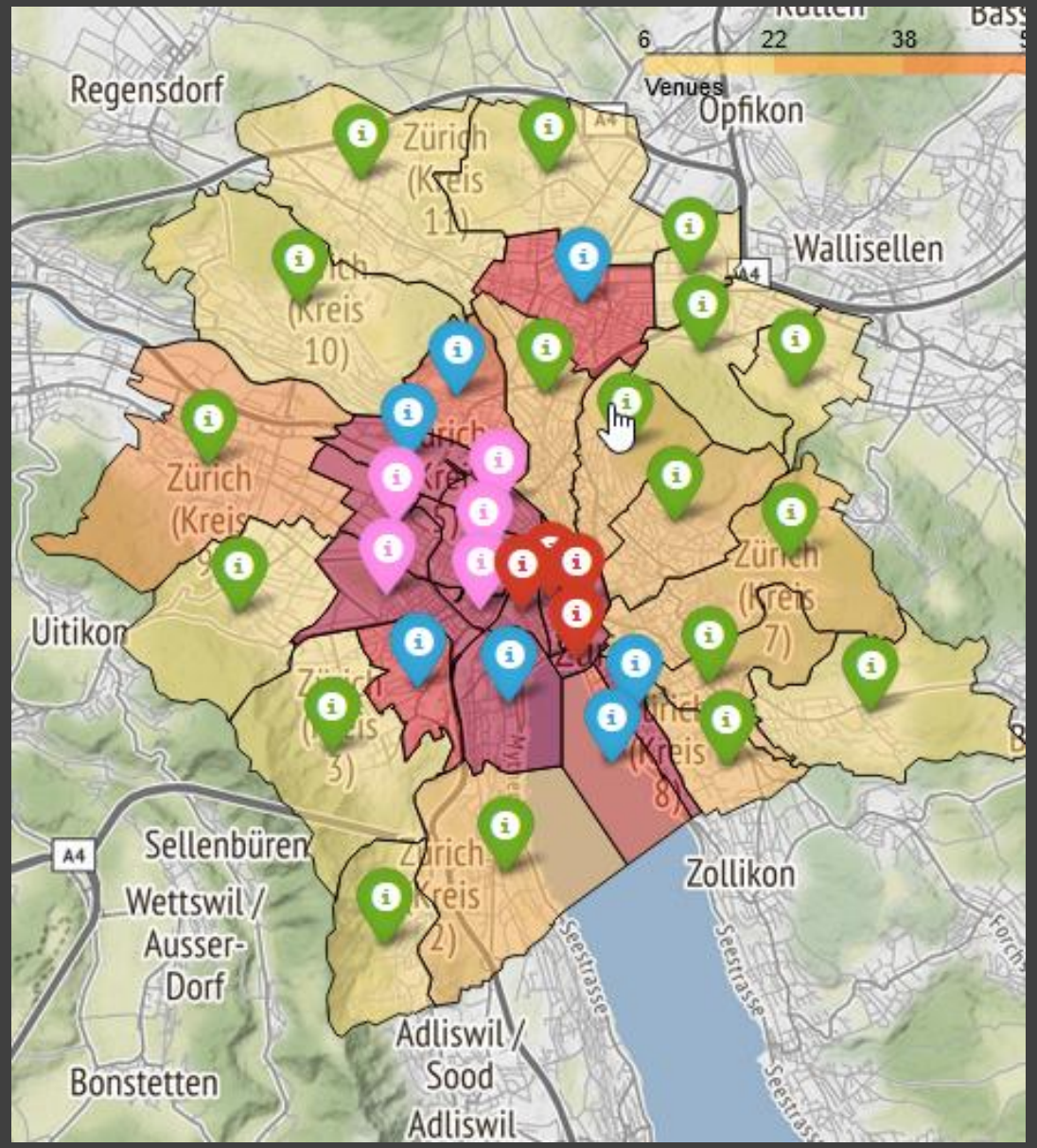
Neighborhood
Hard
Rathaus
Werd
Hochschulen
Lindenhof
Gewerbeschule
Langstrasse
City
Mühlebach
Escher Wyss
Enge
Sihlfeld

Zürich clustered along venues and categories

Clustering distinguishes:

- surrounding and ‘more central’ residential areas of Zürich (green and blue)
- active areas in the center (red and pink)

Note:
Interesting is that clustering somewhat corresponds with predefined neighborhoods.

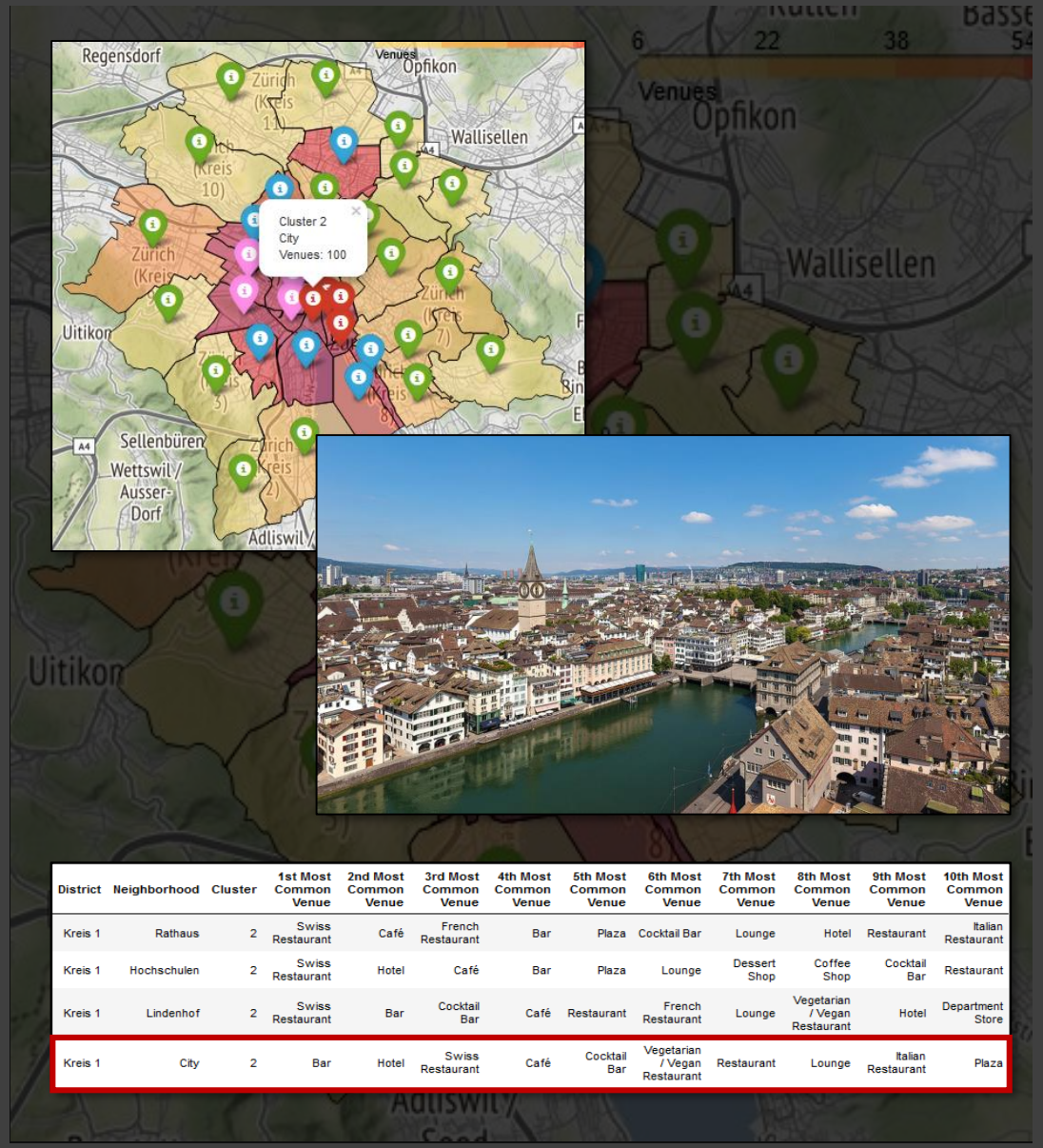


Insight

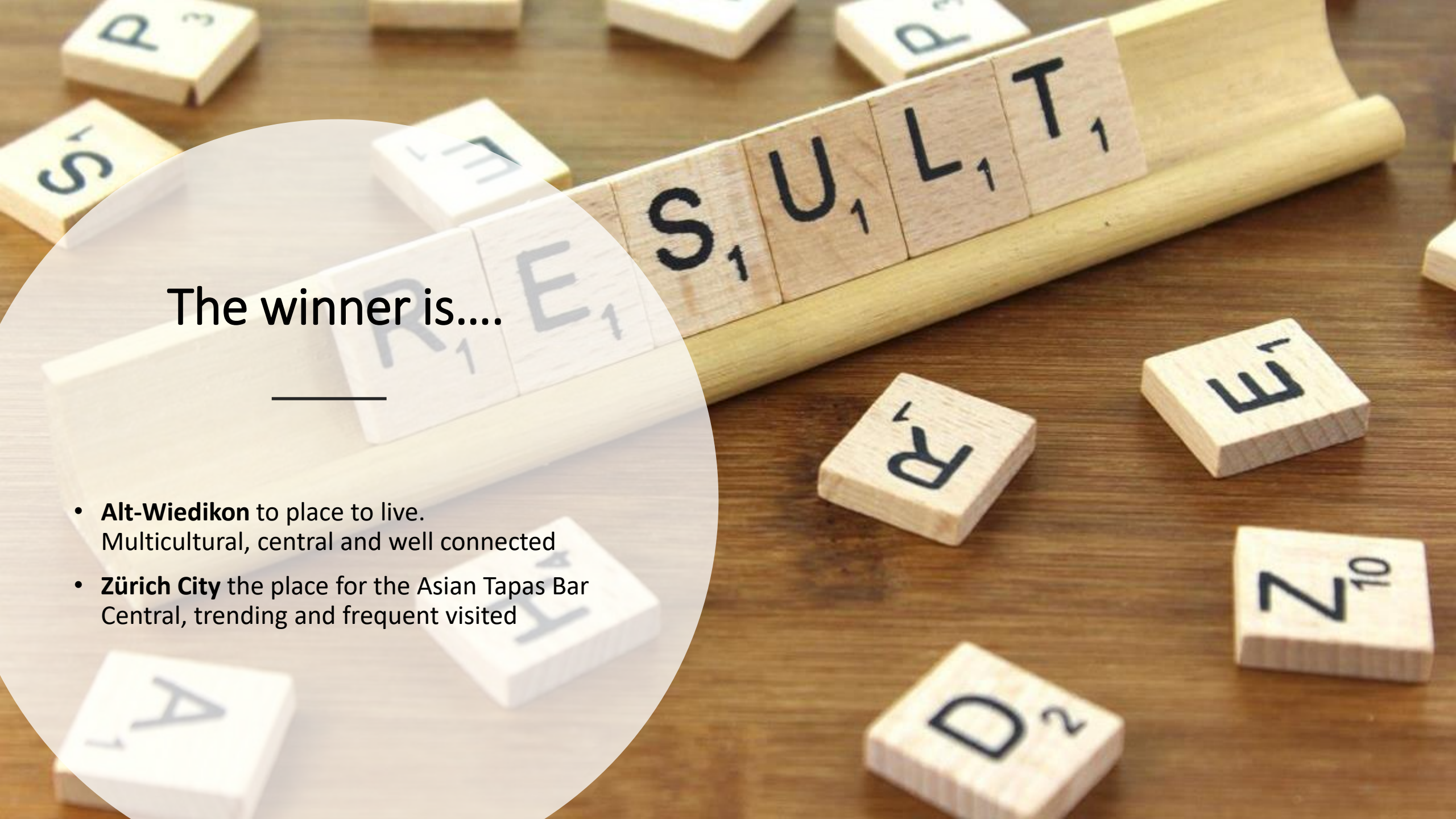
Selecting the best place for the “Asian Tapas Bar”

Zürich City – is a very good place to open the “Asian Tapas Bar”:

- There are no or only few Asian food offerings → **differentiating**
- It is an active area with Bars and some restaurants → **walk-in customers**



District	Neighborhood	Cluster	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Kreis 1	Rathaus	2	Swiss Restaurant	Café	French Restaurant	Bar	Plaza	Cocktail Bar	Lounge	Hotel	Restaurant	Italian Restaurant
Kreis 1	Hochschulen	2	Swiss Restaurant	Hotel	Café	Bar	Plaza	Lounge	Dessert Shop	Coffee Shop	Cocktail Bar	Restaurant
Kreis 1	Lindenhof	2	Swiss Restaurant	Bar	Cocktail Bar	Café	Restaurant	French Restaurant	Lounge	Vegetarian / Vegan Restaurant	Hotel	Department Store
Kreis 1	City	2	Bar	Hotel	Swiss Restaurant	Café	Cocktail Bar	Vegetarian / Vegan Restaurant	Restaurant	Lounge	Italian Restaurant	Plaza



The winner is….

- **Alt-Wiedikon** to place to live.
  Multicultural, central and well connected
- **Zürich City** the place for the Asian Tapas Bar
  Central, trending and frequent visited

Learning and Conclusion from the Capstone Assignment

Data availability

- During the evaluation of the project content it became obvious how many cities and countries open themselves and offer open data platforms. Moreover multiple city across countries are using common data platforms. This was rather surprising than expected. To a certain extend the information fetched from Foursquare is redundant to what the cities are offering themselves.
- To address some data access issues I contacted the listed points and was again surprised, that I received immediate support by the staff from the government. **Big thanks!**
- Given this I conclude that there can be much more done in this area and the tool set from the training is extremely helpful and actually quite sufficient to start this data science journey.

Conclusion on Results

- The results are arbitrary at first and judgment if they are valid by any means is difficult if you have no relation to the topic or the city.
- I am not living in Zürich, but I have a friend living there and so I used the opportunity to present this outcome:
- **Place of Living:** Rational and reasoning why I selected the living was confirmed. To the surprise of all it actually was the area the friend is living in. Also confirmed were the more detailed information, which has not been presented in this report, e.g. changes in the population.
- **Place for the "Asian Tappas Bar“**: Zürich City fits – it is actually a "no brainer"

However….:

- A significant question is about cost and availability of facilities in this area → Availability of data about costs of business facility is an issue and would require far more investigation - issue spotted.
- Another comment was related to the detailed analysis and the identified top tier areas. Here it seems that the analysis misses an aspect: Some of the areas are very close to the university and other schools of Zürich. These areas one offer well priced food places and are frequented during daytime, but in the evening these areas are not very active - I didn't spot this.