

Ideal Business Office Sites in Zurich, Switzerland

Capstone Project: Toward the IBM Data Science Professional Certificate

Applied Data Science Capstone by IBM/Coursera

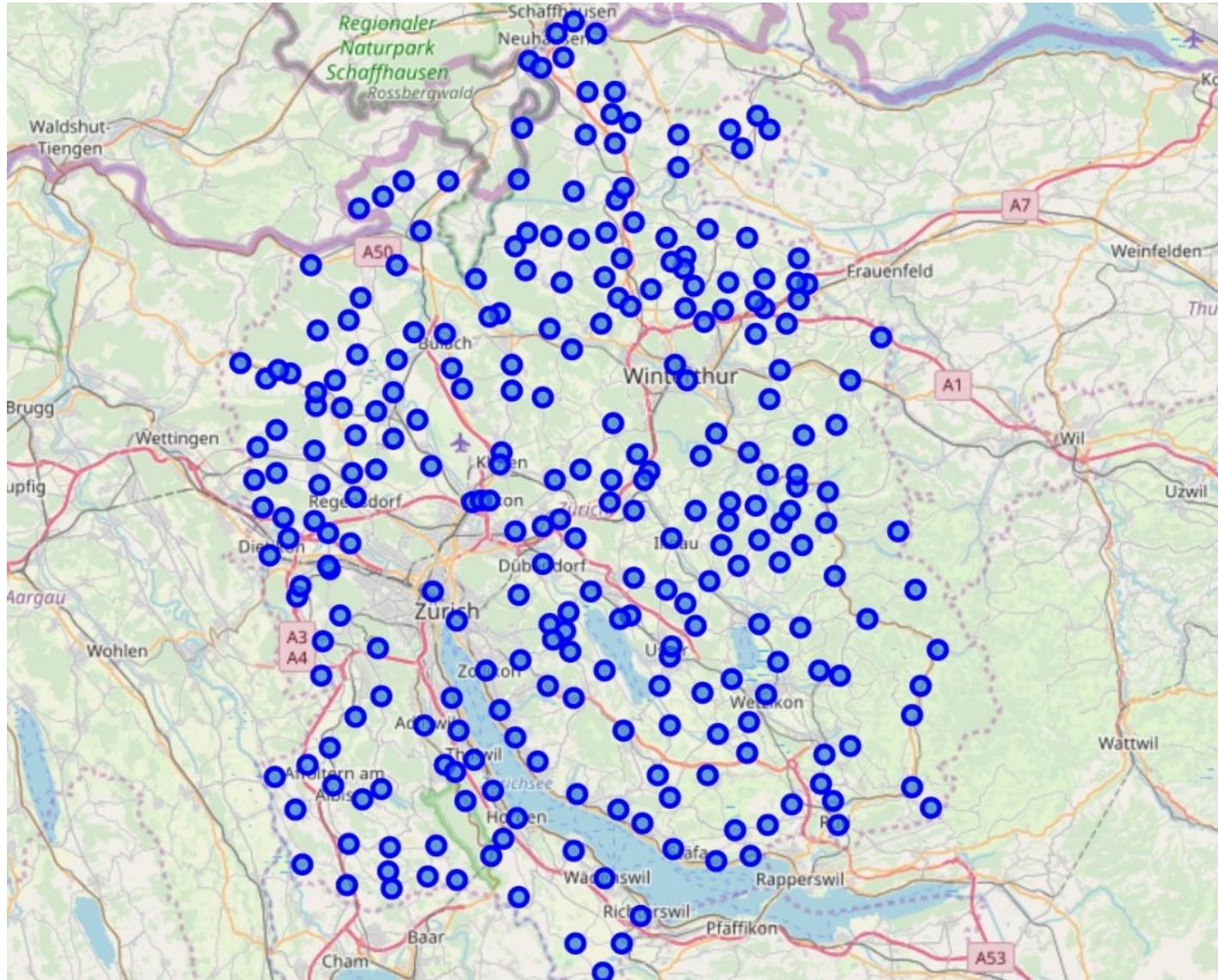
Ting JIN

Introduction

- ▶ **Business Problem:** find an ideal location for startups who want to locate at Zurich
- ▶ **Stakeholders:** companies/contractors who are interested in starting their own business in Zurich, Switzerland with the special consideration to attract qualified employees
- ▶ **Goal:** generate a few most promising neighborhoods for the target stockholders to select an ideal business office

Methodologie

- ▶ **Data (Influence Factors):**
 - ▶ Number of existing restaurants nearby
 - ▶ Existence of gym or sports center nearby
 - ▶ Convenience to take public transportation
- ▶ **Data Acquisition and Methodologie:**
 - ▶ GeoNames Database: basic geographical data in Zurich
 - ▶ Foursquare API: various venues related to each influence factors
 - ▶ Analysis and visualization: data science technical and tools

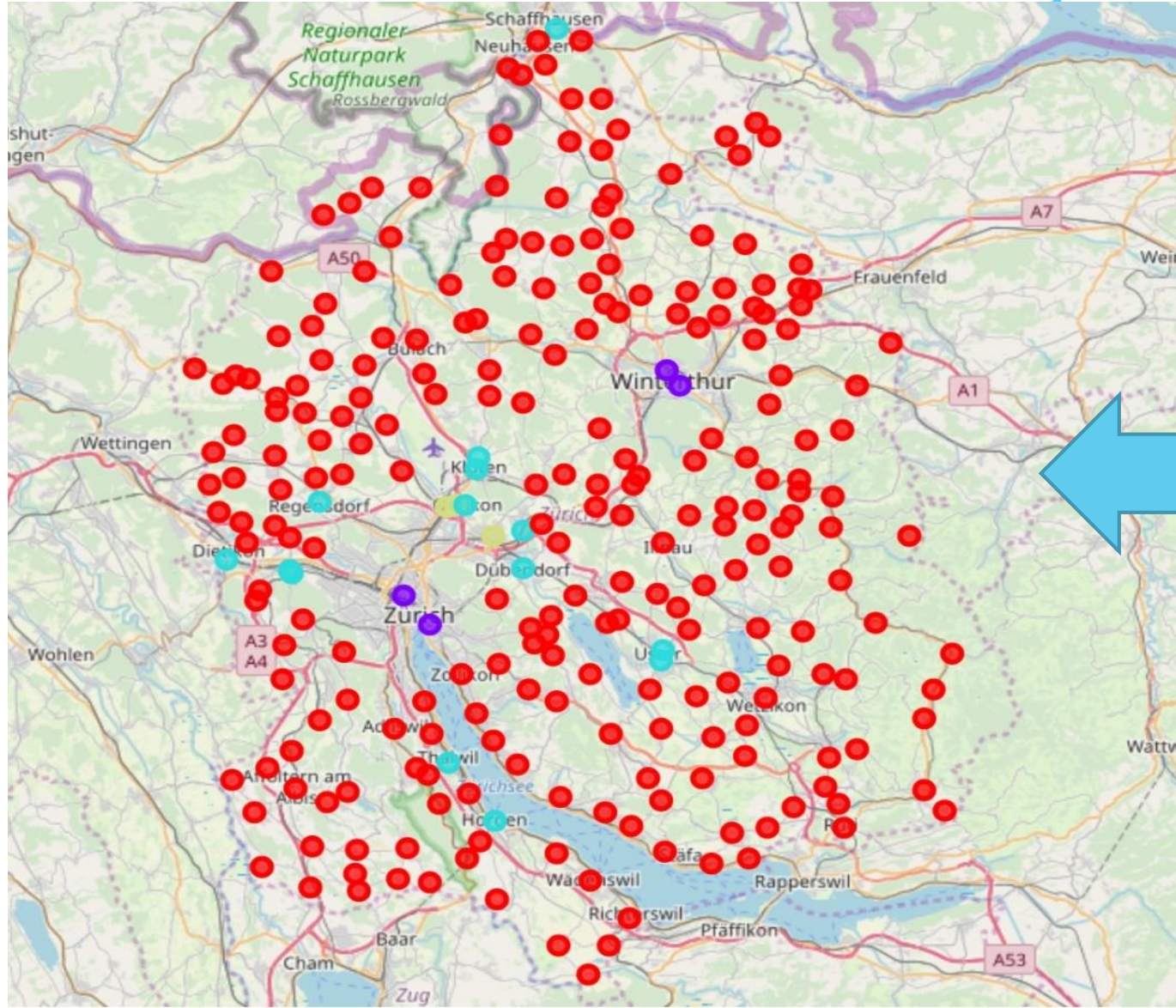


Number of Existing Restaurants Nearby

	PostCode	Neighborhood	Latitude	Longitude	Food
0	8000	Zürich5	47.3828	8.5307	44
1	8001	Zürich6	47.3667	8.5500	40
2	8400	Winterthur	47.5056	8.7241	37
3	8401	Winterthur2	47.4967	8.7342	35
4	8152	Glattbrugg	47.4313	8.5627	24
5	8152	Glattpark (Opfikon)	47.4315	8.5693	22
6	8304	Wallisellen	47.4150	8.5967	22
7	8305	Dietlikon	47.4183	8.6188	15
8	8058	Zürich	47.4580	8.5853	13
9	8800	Thalwil	47.2918	8.5635	13

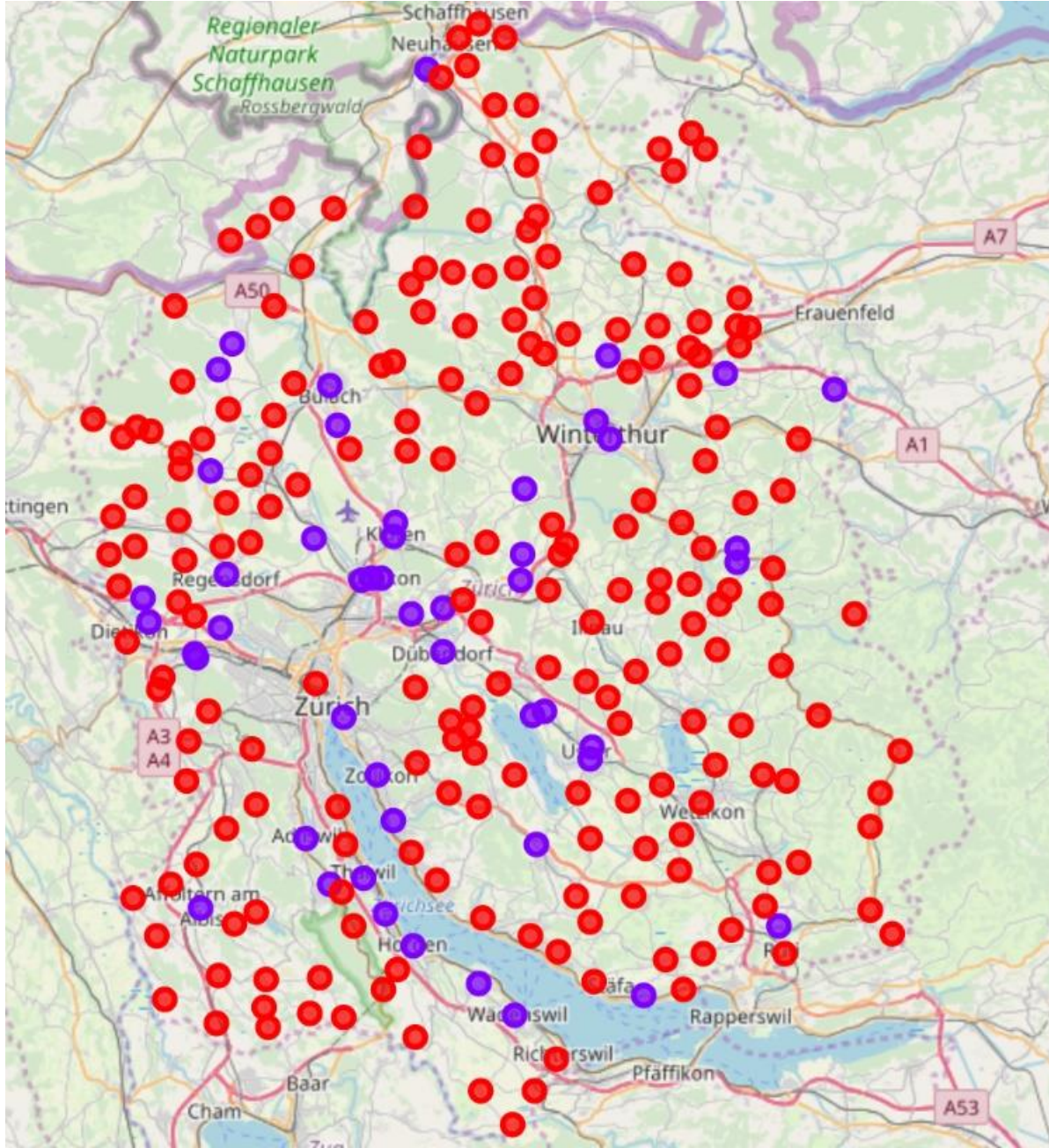
The Top10
Neighborhoods
with the Most
Restaurants
Nearby

Map Visualization of 4 Clusters based on Number of Restaurants Nearby



Purple: Best
Red: Worst

Existence of Gym or Sports Center Nearby



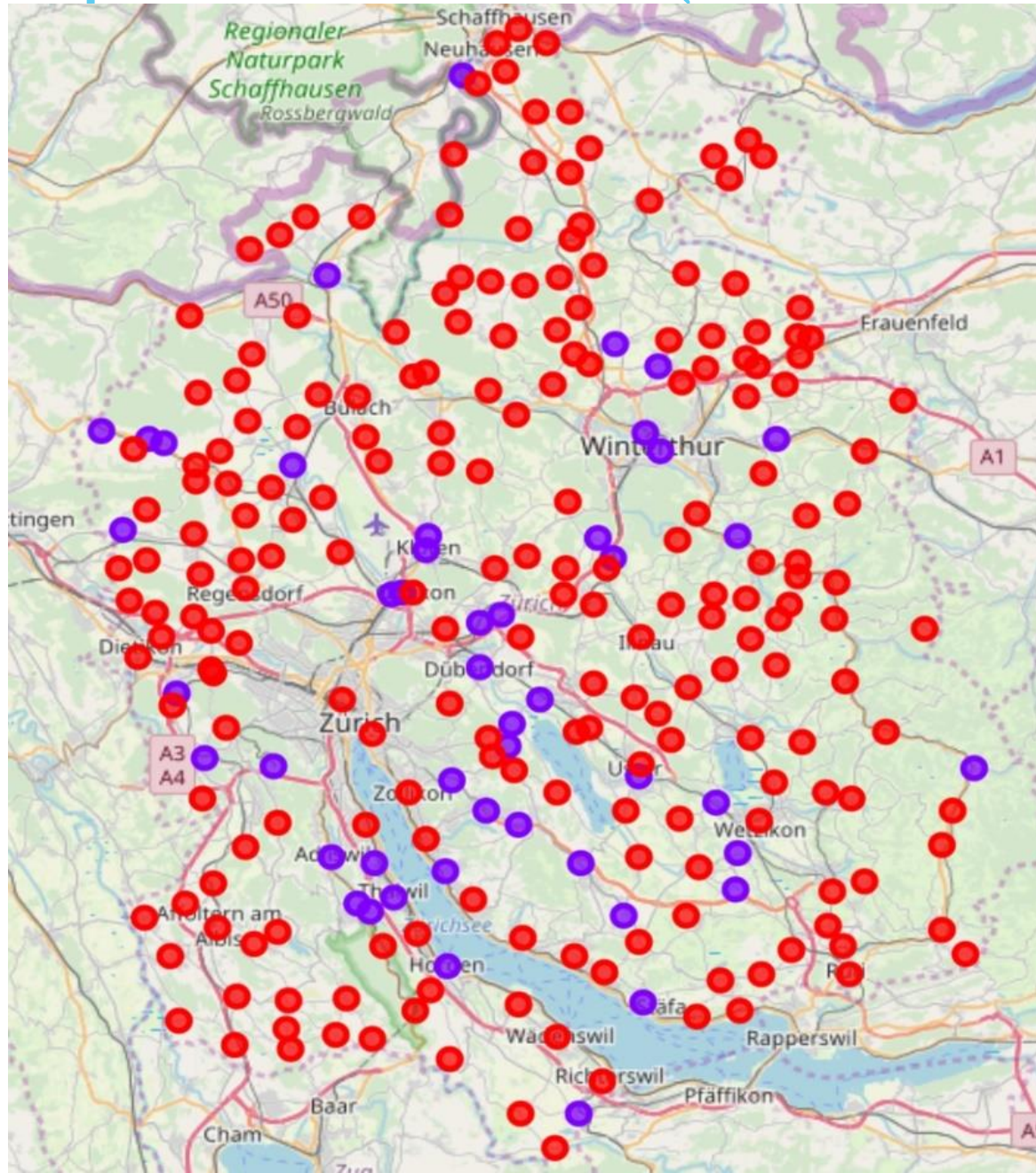
The 49 neighborhoods with at least one gym nearby represented by purple points (ideal ones)

Convenience to take Public Transportation

	PostCode	Neighborhood	Latitude	Longitude	Transport
0	8152	Glattpark (Opfikon)	47.4315	8.5693	7
1	8152	Glattbrugg	47.4313	8.5627	6
2	8302	Kloten	47.4515	8.5849	4
3	8607	Aathal-Seegräben	47.3351	8.7700	3
4	8121	Benglen	47.3608	8.6369	3
5	8135	Langnau am Albis	47.2889	8.5411	3
6	8624	Grüt (Gossau ZH)	47.3115	8.7834	3
7	8166	Niederweningen	47.5061	8.3771	3
8	8127	Forch	47.3252	8.6434	3
9	8803	Rüschlikon	47.3069	8.5514	3

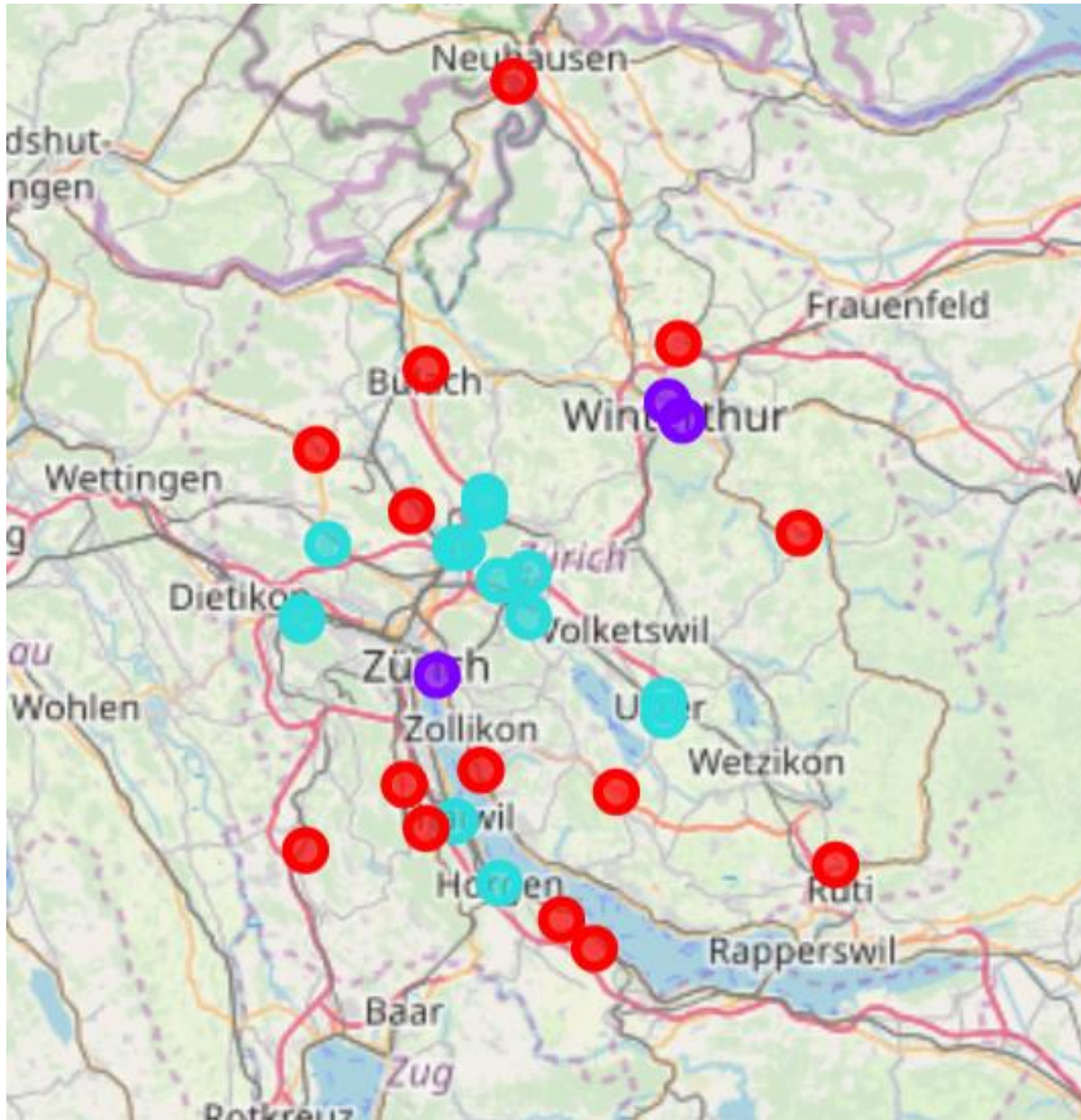
The Top10
Neighborhoods
with the Most
Public
Transportation
Nearby

Map Visualization (Public Transportation)



The 47 neighborhoods with at least two public stations nearby represented by purple points (ideal ones)

Aggregated Analysis



All the 31 neighborhoods in this figure satisfy the basic demands

*Selection Order:
Purple: 3 -- Turquoise:
14 -- Red: 14*

Results

	PostCode	Neighborhood	Latitude	Longitude	Food	Gym	Transport	Cluster Labels
0	8001	Zürich6	47.3667	8.5500	40	1	1	1
1	8400	Winterthur	47.5056	8.7241	37	3	2	1
2	8401	Winterthur2	47.4967	8.7342	35	2	2	1
3	8152	Glattbrugg	47.4313	8.5627	24	2	6	2
4	8152	Glattpark (Opfikon)	47.4315	8.5693	22	2	7	2
5	8304	Wallisellen	47.4150	8.5967	22	2	1	2
6	8305	Dietlikon	47.4183	8.6188	15	1	3	2
7	8800	Thalwil	47.2918	8.5635	13	2	2	2
8	8058	Zürich	47.4580	8.5853	13	2	2	2
9	8952	Schlieren	47.3967	8.4476	12	2	1	2
10	8010	Zürich3	47.3950	8.4488	12	2	1	2
11	8302	Kloten	47.4515	8.5849	11	1	4	2
12	8610	Uster	47.3471	8.7209	11	1	2	2
13	8600	Dübendorf	47.3972	8.6187	10	1	2	2
14	8613	Uster 3	47.3532	8.7216	10	3	1	2
15	8105	Regensdorf	47.4341	8.4687	10	1	1	2
16	8810	Horgen	47.2598	8.5978	9	2	3	2

Best

Equally
Second-
Best

Conclusions and Limitations

- ▶ *Narrowing down the ideal business location in Zurich from the original more than 300 to around 30 neighborhoods*
- ▶ *Find 3 of the best possible business office locations and 14 second-good ones to present to stakeholders*
- ▶ *Many other factors are not considered in this project*
- ▶ *Results may vary based on distinct criteria and analyzed at different times*