Predicting the best place for a restaurant opening in Lausanne (Switzerland)
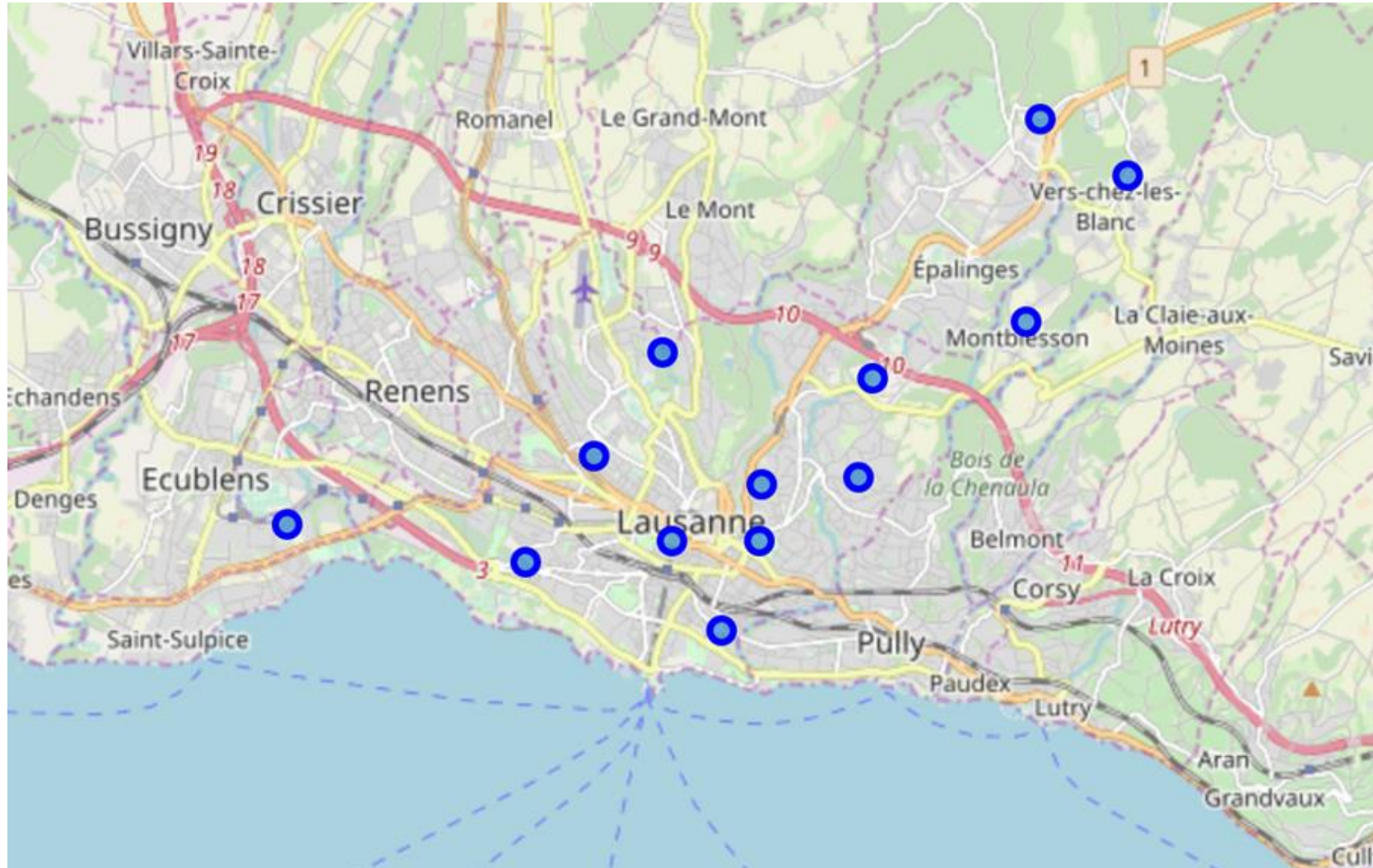
22.03.2020

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Predicting best location for new restaurant opening is a valuable information to start a new business

- Food, service but also the location have to be choosen in a meaningful way

- For the location, different parameters to take into account:

  - Parking availability

  - Visibility

  - Neighborhood competition
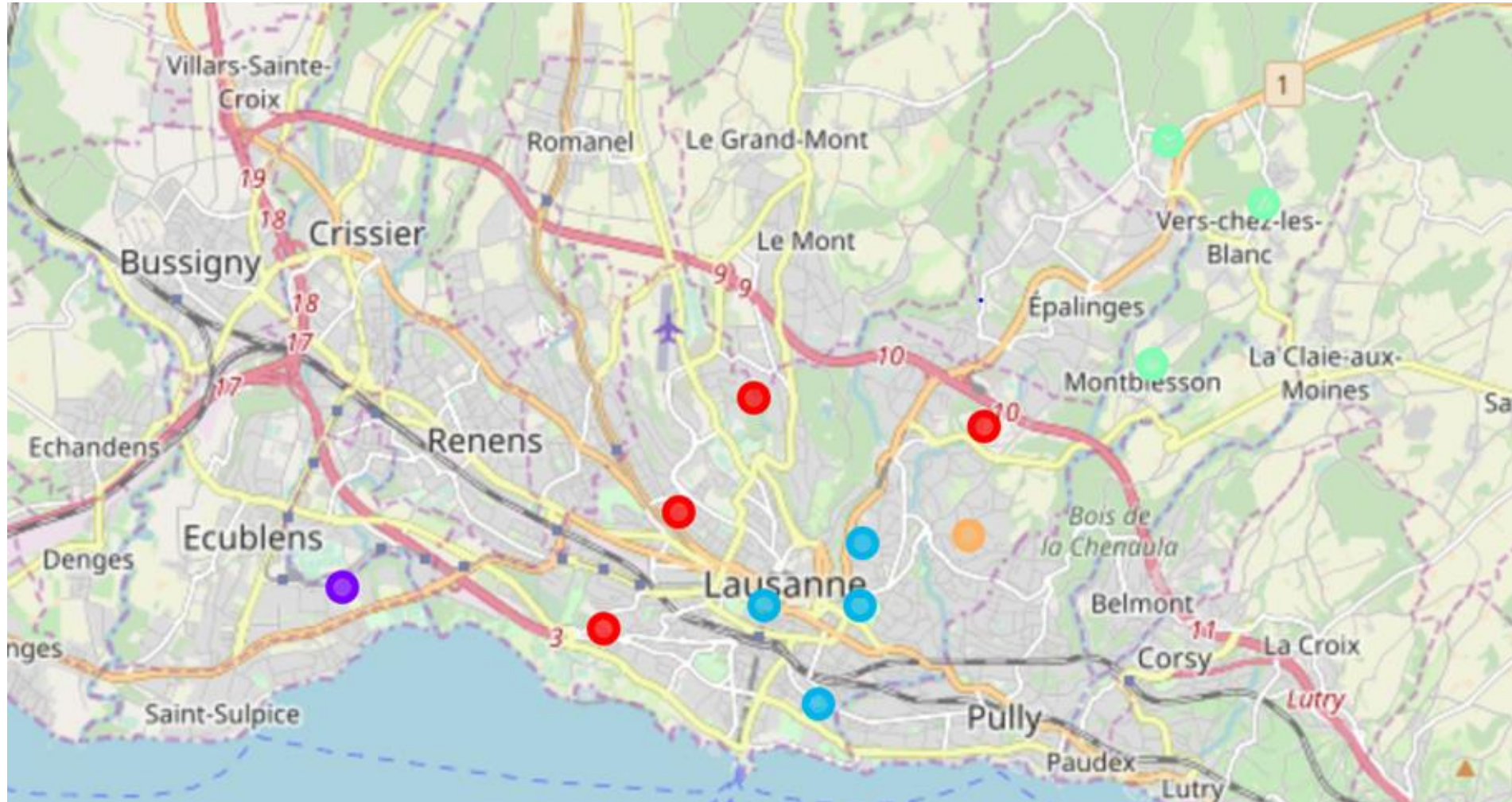
Data acquisition and cleaning

- Geospatial data scrapped from :

- https://data.geo.admin.ch/ch.swisstopo-vd.ortschaftenverzeichnis_plz/PLZO_CSV_WGS84.zip

- Features selection: locality, Postcode, Longitude, Latitude

- Data selection: geospatial data concerning Lausanne location

Data representation on a map

Cluster analysis of different Lausanne areas on a map

Cluster analysis of different Lausanne areas

```
# Cluster 1
lausanne_merged.loc[lausanne_merged['Cluster Labels'] == 0, lausanne_merged.columns[[1] + list(range(5, lausanne_merged.shape[1]))]]
```

Out[37]:

	Postcode	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
4	1004	Bus Stop	Grocery Store	Supermarket	Bus Station	Jewish Restaurant	Restaurant	Italian Restaurant	Sporting Goods Shop	Stadium	Steakhouse
7	1007	Bus Station	Snack Place	Restaurant	Supermarket	Hotel	Grocery Store	Gas Station	Construction & Landscaping	Park	Gym
8	1010	Gym	Gas Station	Bus Station	Sushi Restaurant	Wine Bar	Ethiopian Restaurant	Cupcake Shop	Deli / Bodega	Department Store	Dessert Shop
12	1018	Grocery Store	Bus Stop	Bus Station	Supermarket	Wine Bar	Ethiopian Restaurant	Cupcake Shop	Deli / Bodega	Department Store	Dessert Shop

```
# Cluster 2
lausanne_merged.loc[lausanne_merged['Cluster Labels'] == 1, lausanne_merged.columns[[1] + list(range(5, lausanne_merged.shape[1]))]]
```

	Postcode	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
11	1015	Stadium	Deli / Bodega	Light Rail Station	College Cafeteria	Wine Bar	Creperie	Cupcake Shop	Department Store	Dessert Shop	Diner

```
# Cluster 3
lausanne_merged.loc[lausanne_merged['Cluster Labels'] == 2, lausanne_merged.columns[[1] + list(range(5, lausanne_merged.shape[1]))]]
```

	Postcode	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
3	1003	Bar	Café	Italian Restaurant	French Restaurant	Plaza	Japanese Restaurant	Swiss Restaurant	Lounge	Burger Joint	Gym
5	1005	Bar	Pizza Place	Nightclub	Hotel	Italian Restaurant	French Restaurant	Park	Bakery	Supermarket	Burger Joint
6	1006	Café	Park	Skating Rink	Museum	Pharmacy	Art Museum	Bakery	Bar	Plaza	Pool
9	1011	Thai Restaurant	Hotel	Sushi Restaurant	Vietnamese Restaurant	French Restaurant	Italian Restaurant	Massage Studio	Metro Station	Museum	Pizza Place

```
# Cluster 4
lausanne_merged.loc[lausanne_merged['Cluster Labels'] == 3, lausanne_merged.columns[[1] + list(range(5, lausanne_merged.shape[1]))]]
```

	Postcode	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
0	1000	French Restaurant	Swiss Restaurant	Spa	Restaurant	Gas Station	Food Court	Wine Bar	Creperie	Cupcake Shop	Deli / Bodega
1	1000	French Restaurant	Swiss Restaurant	Spa	Restaurant	Gas Station	Food Court	Wine Bar	Creperie	Cupcake Shop	Deli / Bodega
2	1000	French Restaurant	Swiss Restaurant	Spa	Restaurant	Gas Station	Food Court	Wine Bar	Creperie	Cupcake Shop	Deli / Bodega

```
# Cluster 5
lausanne_merged.loc[lausanne_merged['Cluster Labels'] == 4, lausanne_merged.columns[[1] + list(range(5, lausanne_merged.shape[1]))]]
```

	Postcode	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
10	1012	Department Store	Bakery	Sushi Restaurant	Supermarket	Fast Food Restaurant	Wine Bar	Ethiopian Restaurant	Creperie	Cupcake Shop	Deli / Bodega

Conclusion

- Regarding restaurant competiton and visibility:

- Cluster 3 and cluster 4 should be avoided to start a new restaurant

- Cluster 1, 2 and 5 are better place to start a new restaurant business because there are not so much famous restaurants in these areas