Study of recharging stations placement for electric car sharing systems

Report 4

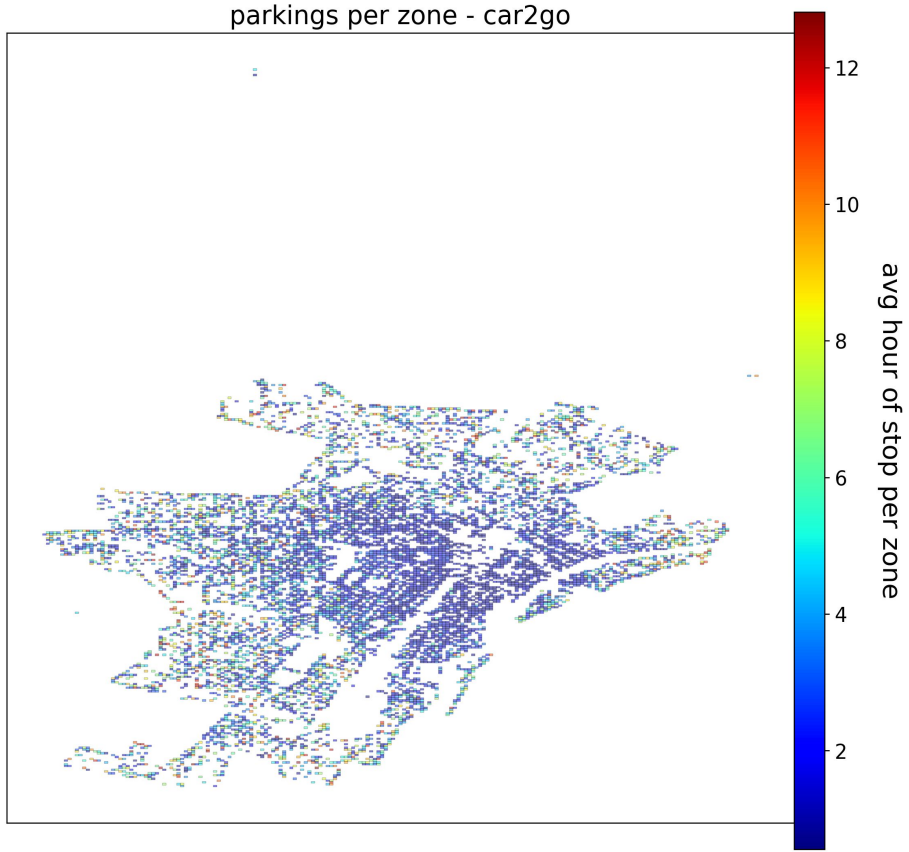
Procedure

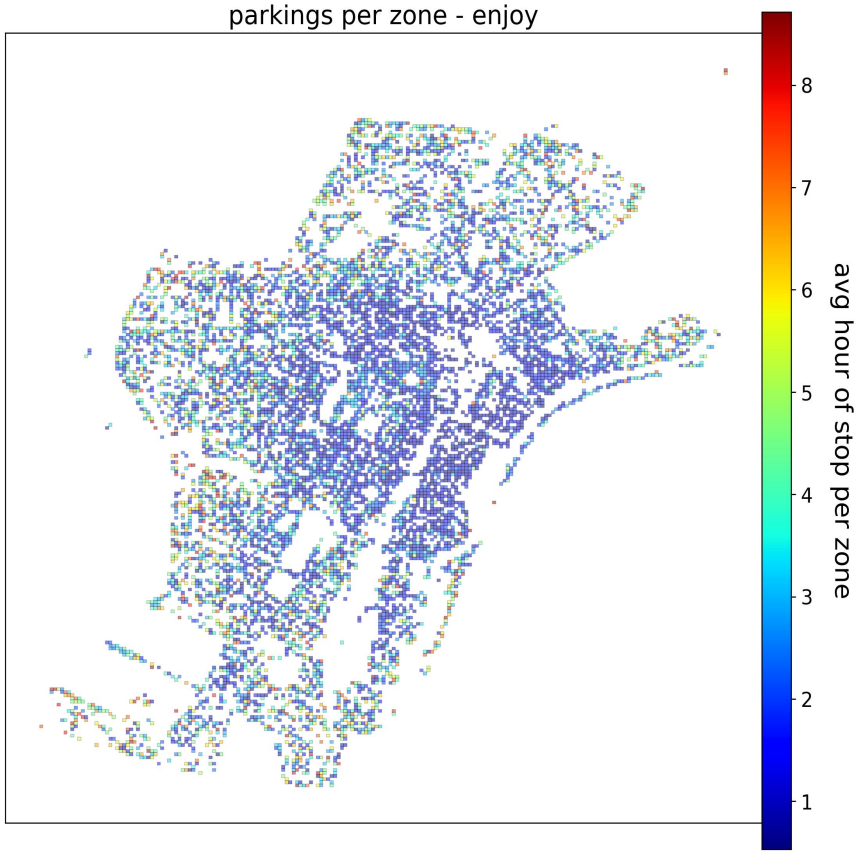
- All parkings in the period 17th may - 17th june 2017 are queried.
- From the shapefile of Turin (which has the zoning of all the metropolitan area) is built a grid with different cell dimensions:
  - Form the dataset are took the point which have
    - Biggest and smallest latitude and longitude
  - On this limit points was built the grids
- The latitude and longitude steps are built according to a numerical procedure:
  - Longitude step (for 50m): 0.00064°
  - Latitude step (for 50m): 0.00045°
  - The steps for 100,250,500m grids are computetd by multiplying the 50m steps per 2,5 and 10.
- For each grid size a new shapefile is build

Data explaining

- The maps are displaying the average number of hour for each parking in each grid
  - It is the *factor* data explained in the report 3
  - Is obtained
    - Giving to each parking the the id for the zone
    - Summing all the parking duration for each zone
    - Dividing the total zonal duration by 60 (to obtain the hour, from minutes) and then dividing by the number of parkings for each zone

50mx50m grid

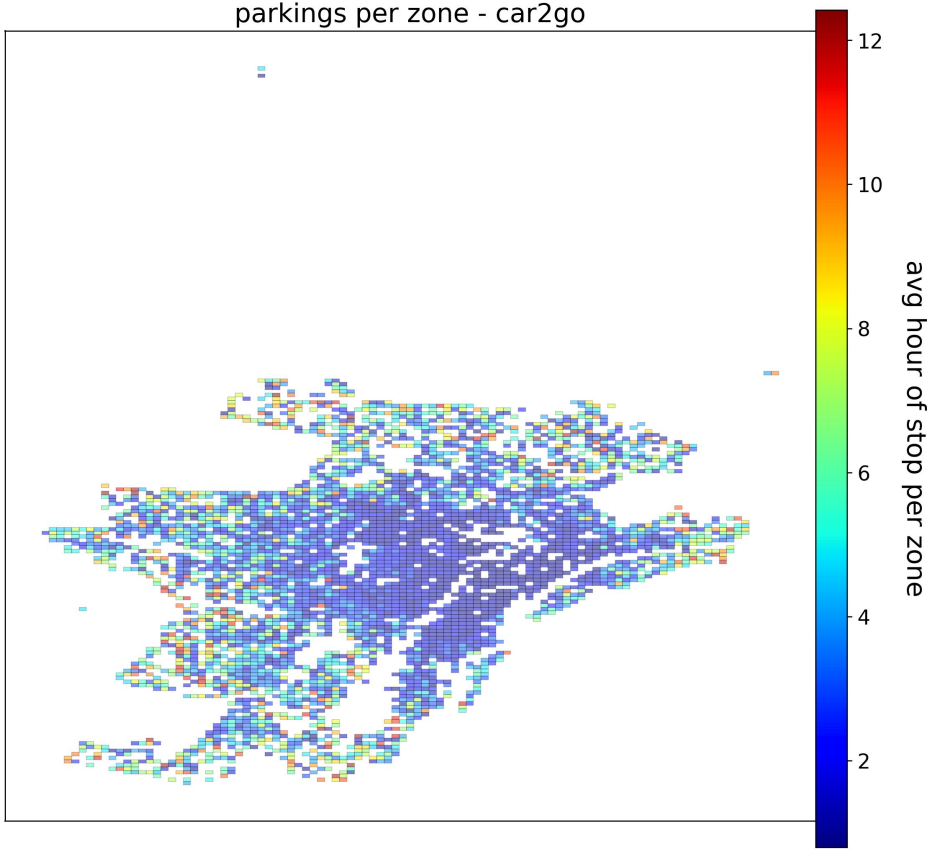


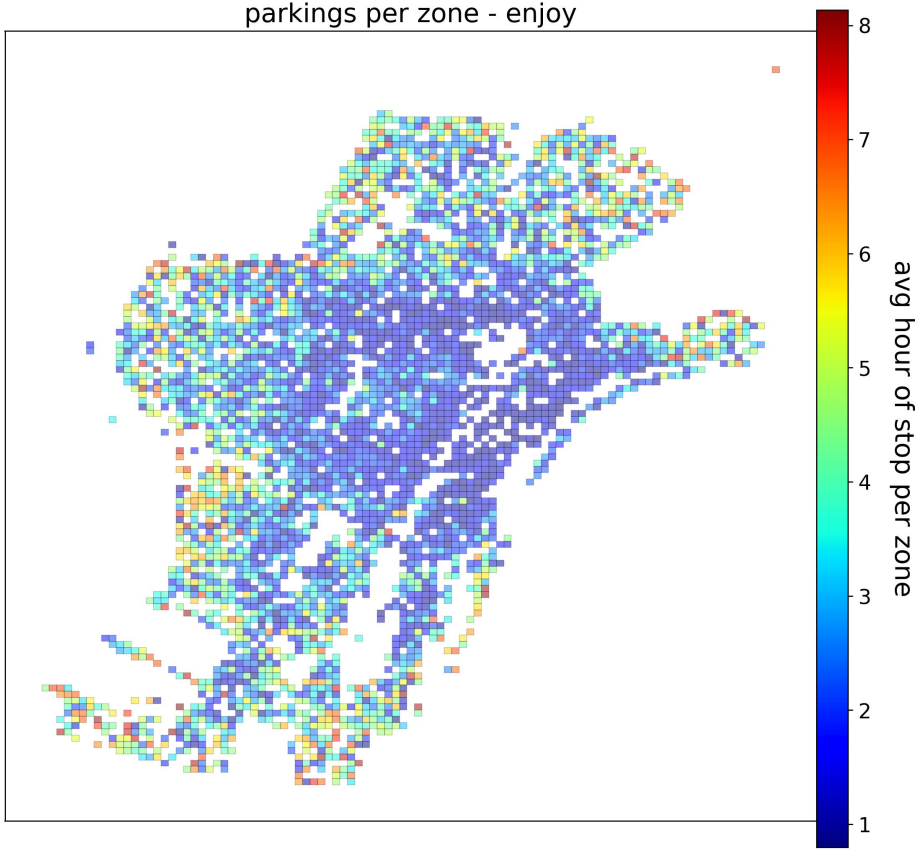


50mx50m grid - caveats

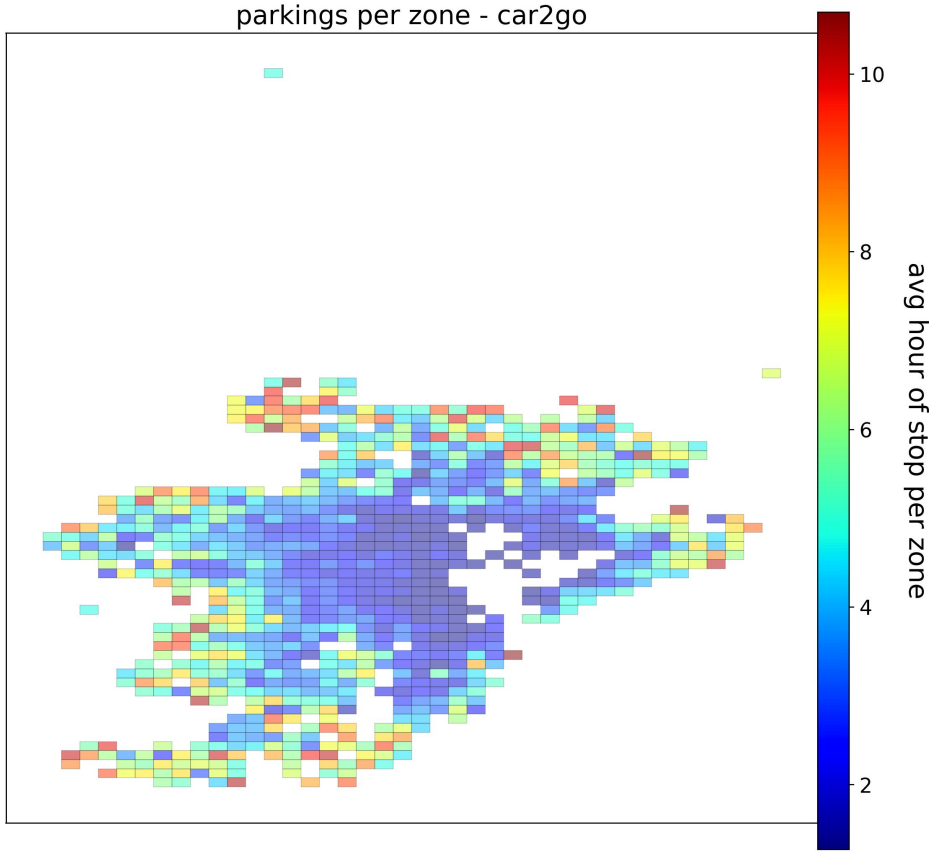
- Computationally expensive
  - 10 minutes per map for PC with intel i7 /16GB of ram
- Good level of details
  - Possible recognize pedestrian areas, city park, big buildings...

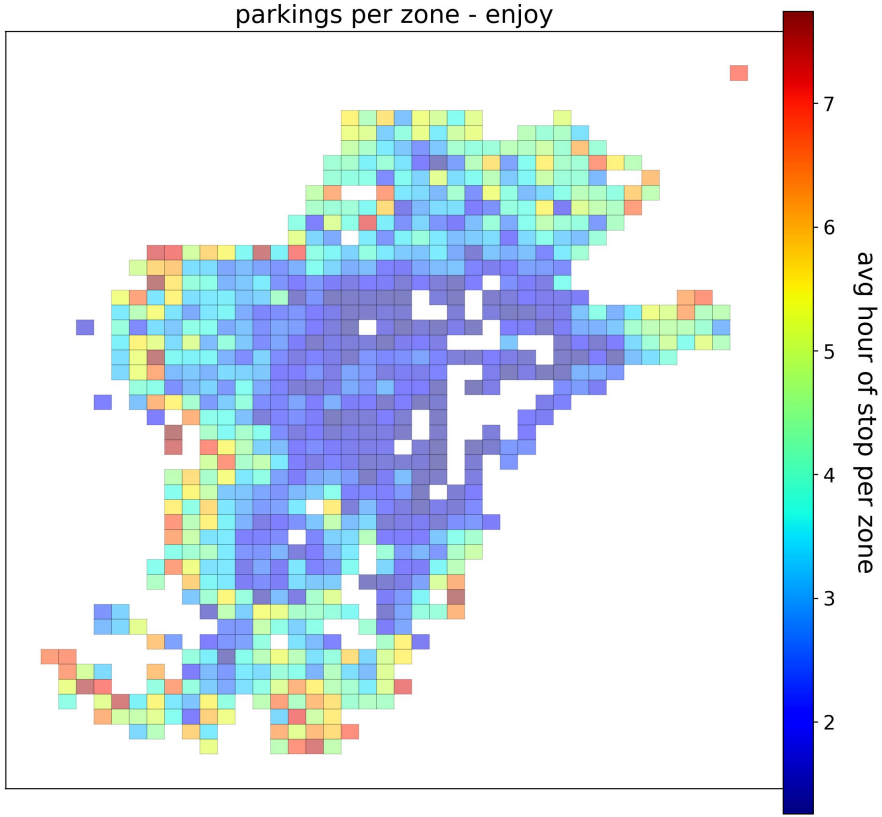
100mx100m grid



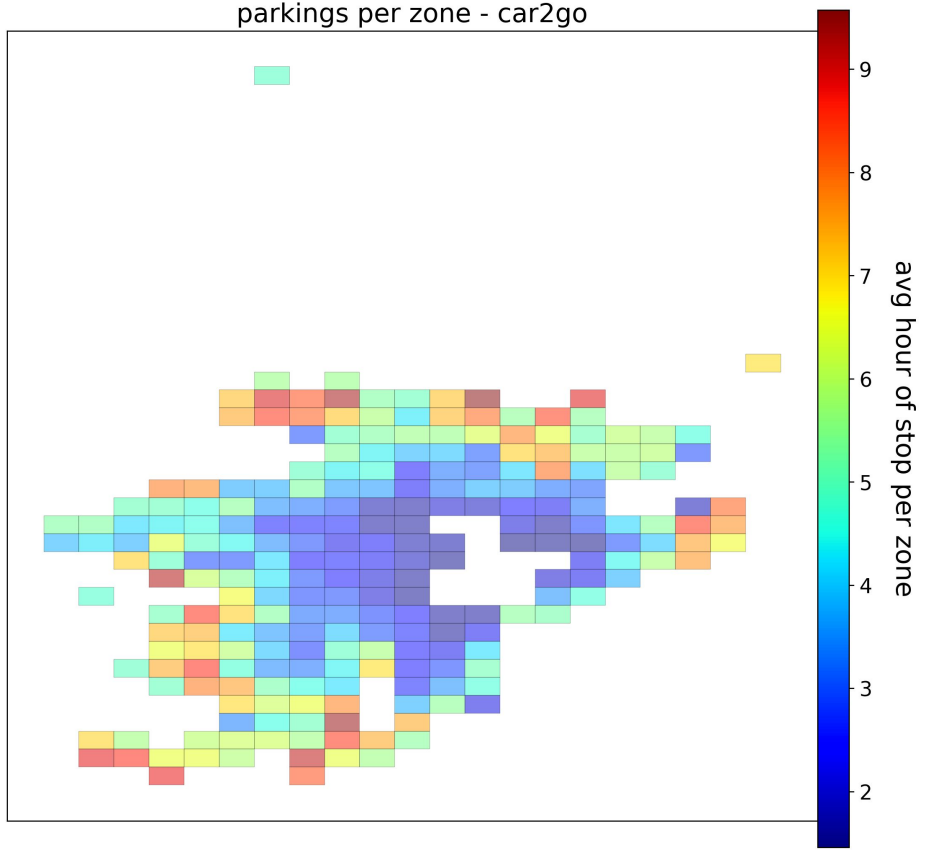


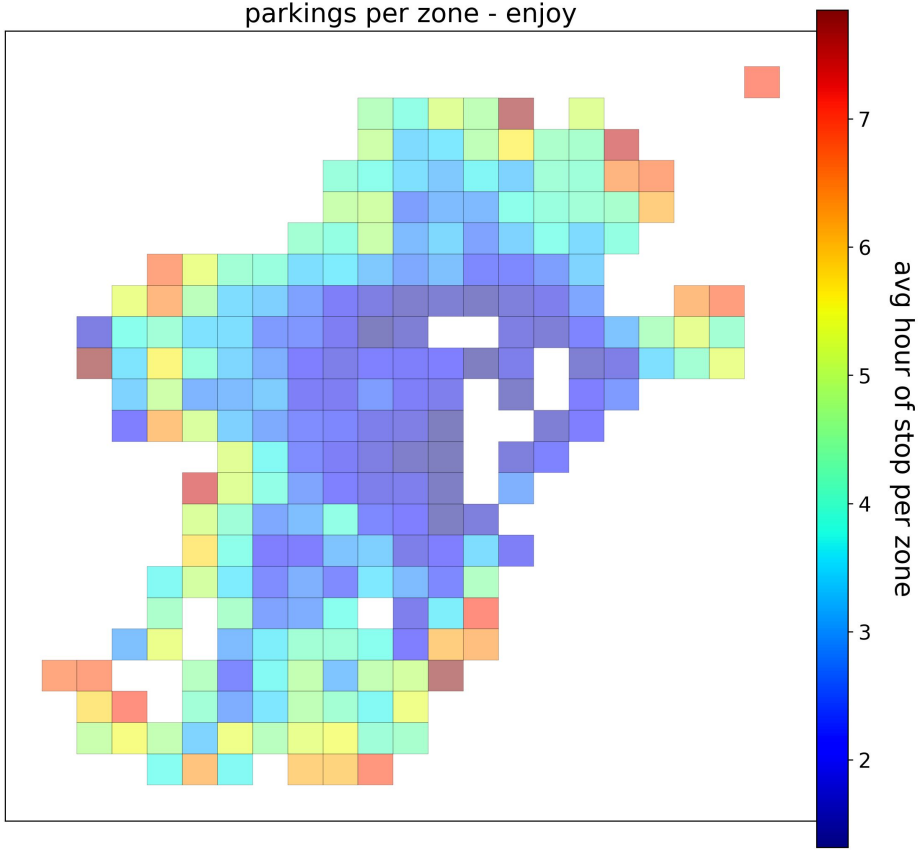
250mx250m grid





500mx500m


parkings per zone - car2go
avg hour of stop per zone
9
8
7
6
5
4
3
2


parkings per zone - enjoy
avg hour of stop per zone
7
6
5
4
3
2