



Reducing Traffic Congestion by Urban Planning Improvement

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Greenhouse gas emissions

- ❑ Carbon dioxide (CO₂) is one of the most responsible for Earth's climate changes.
- ❑ Vehicle traffic congestion is directly related to this problem.



Source: The Guardian

Other Vehicle Traffic Congestion Problems

- ❑ Affect the health of drivers and passengers
- ❑ Waste of potentially productive time
- ❑ Vehicles breakdowns and maintenance



Source: CBS News

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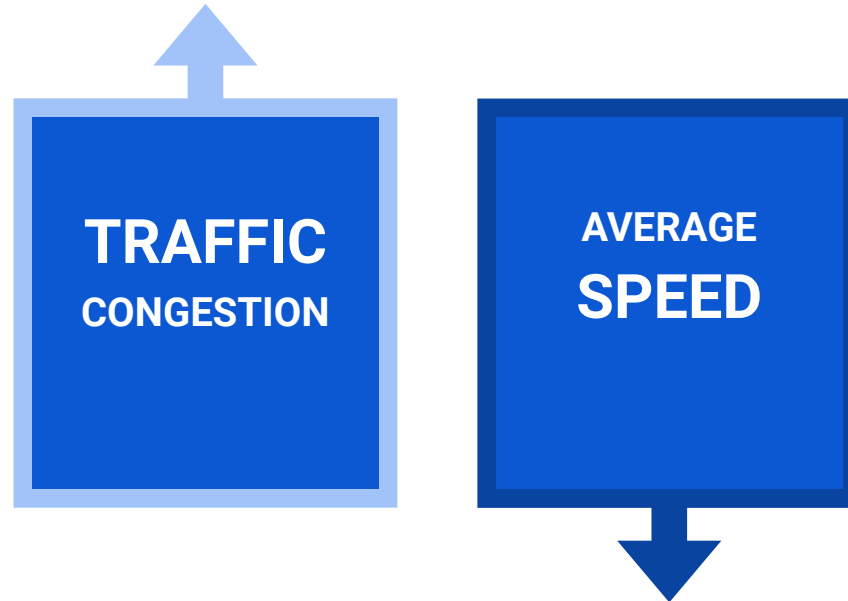


Chicago Traffic Tracker Dataset

- ❑ 29 traffic regions
- ❑ Traffic congestion by monitoring and analyzing GPS traces
- ❑ Attributes:
 - ❑ Identification and description of city regions
 - ❑ Identification, characteristics and timestamp of readings
 - ❑ Location coordinates of readings
 - ❑ Congestion indicator: average traffic speed

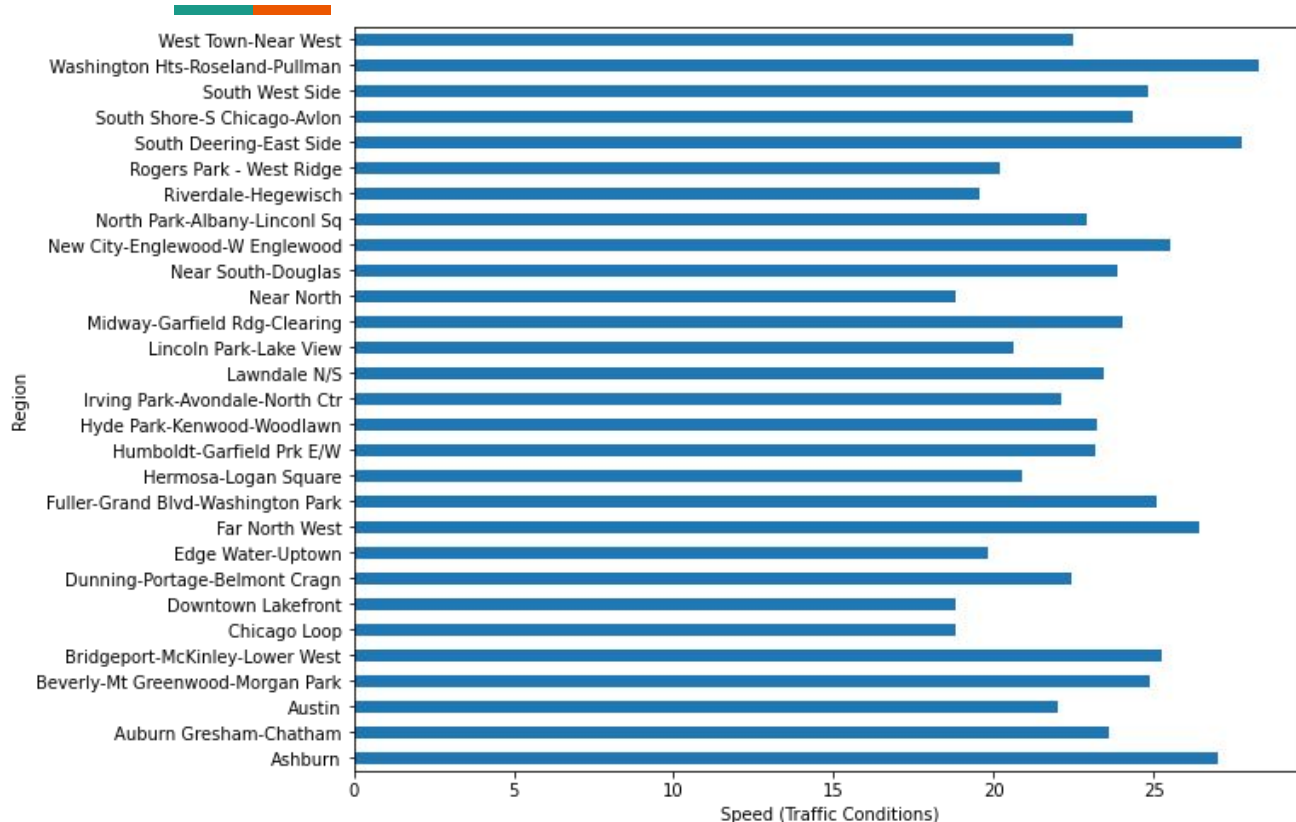


Average Traffic Speed



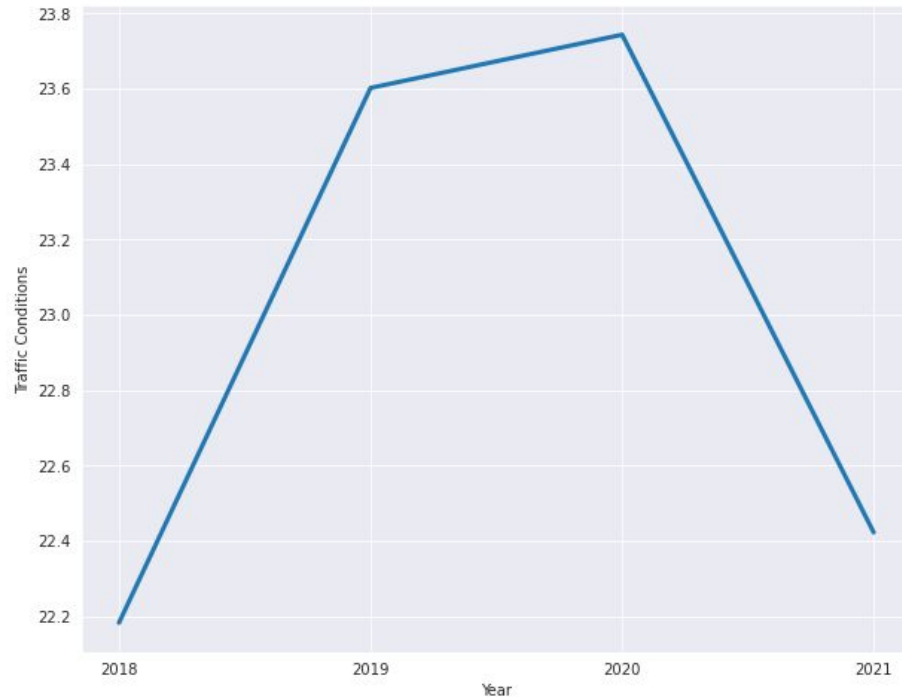
Data analysis

Average traffic conditions in each Chicago's region, from 2018 until nowadays



Evolution of traffic conditions

- ❑ 2019: outlier (probably)
- ❑ 2020: outlier (covid-19)
- ❑ 2021: incomplete
- ❑ **2018: analyzed**





Processes executed

Data Processing

Datasets filtered
and joined

Venues Requested

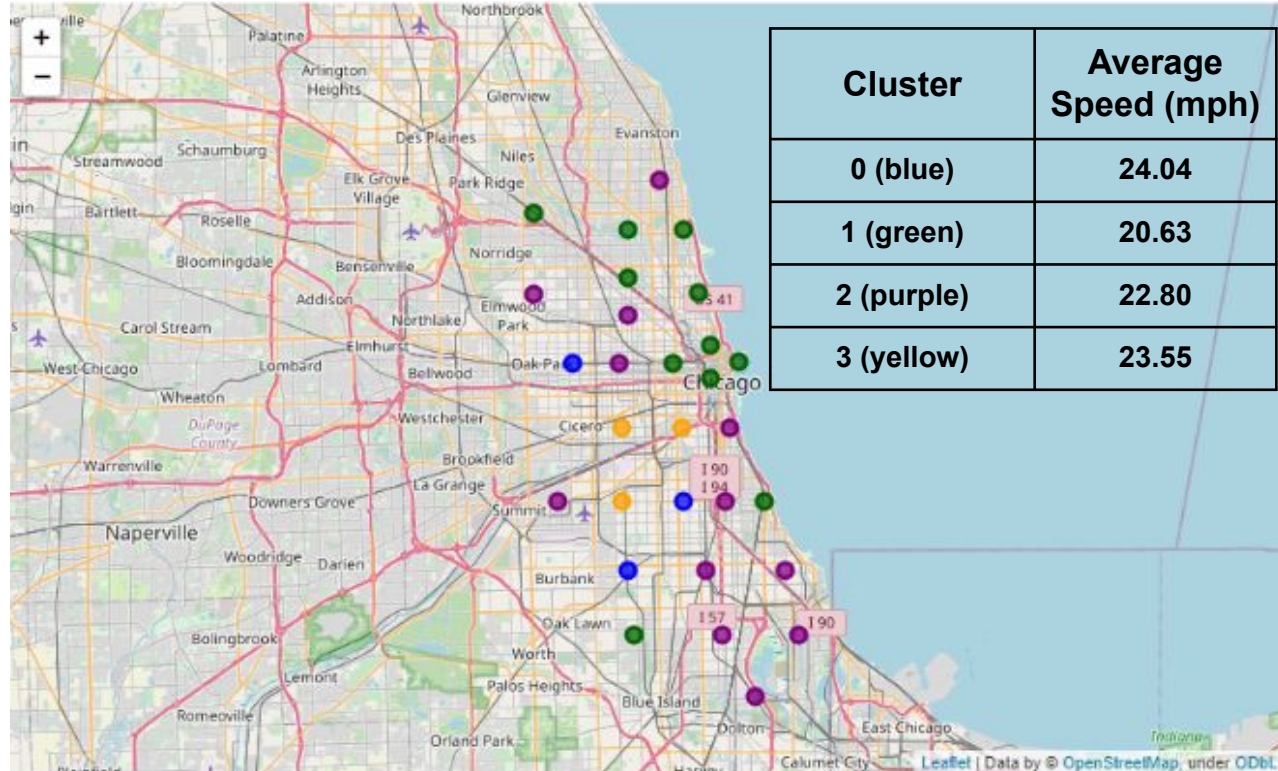
Venues from
Foursquare

Clustering

KMeans
algorithm

Results

Regions clustered according with the their venues and facilities.



Venues and traffic conditions correlation

- ❑ Venue classifications and traffic conditions can help better distribution of the city's venues and facilities
- ❑ Can mitigate traffic jams in the streets and avenues
- ❑ Better life experience and health conditions
- ❑ Reduce CO2 emissions

