

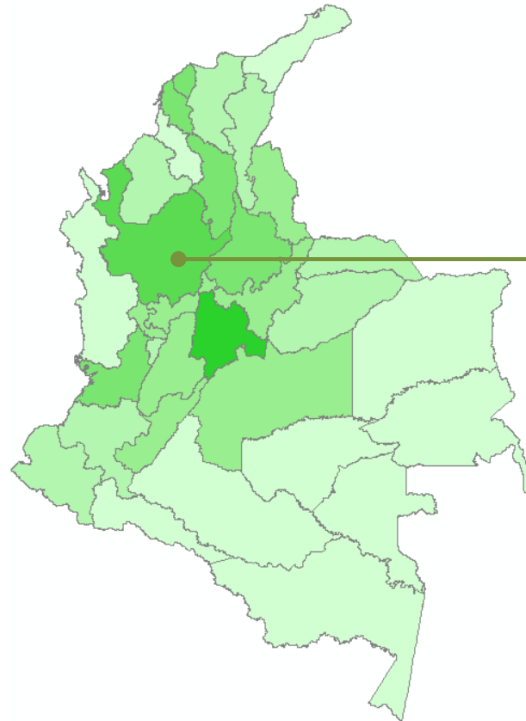


Which place should the city of Medellín carry out traffic accident prevention strategies?

Edward J. Garzon – Capstone Project

Goal

This year the city wants to make different strategies that motivate people to become aware of traffic accidents, the main strategy is to make events or campaigns that involve recreational activities and promote good coexistence and respect for the rules. For this reason Medellin needs to find nearby places where more accidents occur and adapt the spaces for this strategy.



Best Location

Medellín, Colombia

Data acquisition and cleaning

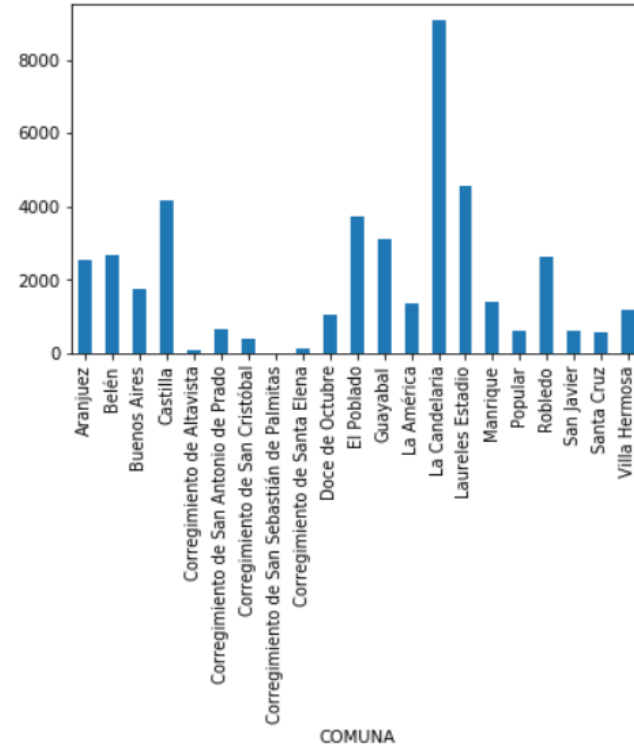
The data is taken from the open data source of the city of Medellin and is integrated with the program that we will show in this document. To determine the most appropriate nearby places to carry out the recreational campaigns, we will take them using the Foursquare API.

Source: <https://geomedellin-m-medellin.opendata.arcgis.com/datasets/accidentalidad-georreferenciada-2019/data>
Fouresquare API

Data acquisition and cleaning

To clean the data, it was grouped by the number of accident cases in the different areas or neighborhoods of the city from the initial data.

	COMUNA	Longitude	Latitude
0	Laureles Estadio	-75.580468	6.248048
1	San Javier	-75.618559	6.252485
2	Aranjuez	-75.563917	6.289015
3	Castilla	-75.572907	6.288664
4	El Poblado	-75.569421	6.220046

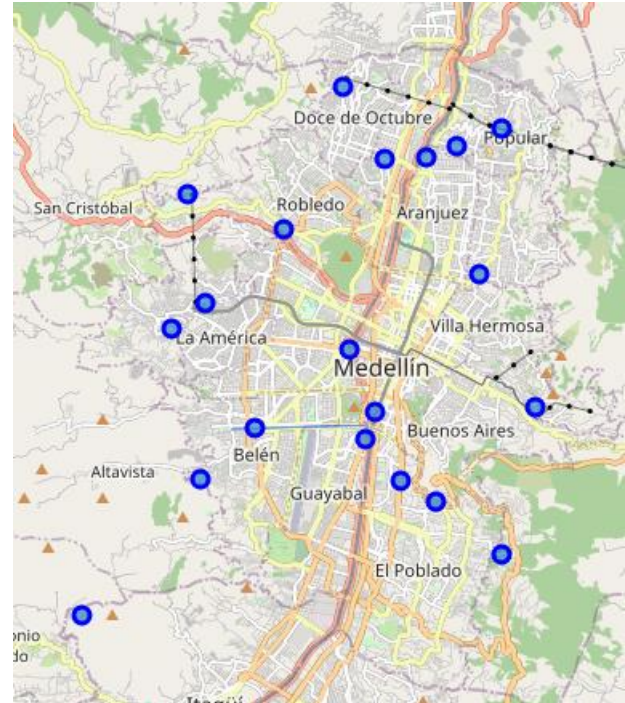


Modeling

We already have the highest accident locations. The next step is to determine which places are closest to these geographic points.

In this order find the zone "La Candelaria" with more cases of accidents

	COMUNA	Longitudo	Latitude
0	Laureles Estadio	-75.580468	6.248048
1	San Javier	-75.618559	6.252485
2	Aranjuez	-75.563917	6.289015
3	Castilla	-75.572907	6.288664
4	El Poblado	-75.569421	6.220046
5	Robledo	-75.594462	6.273563
6	Guayabal	-75.577127	6.228937
8	La Candelaria	-75.575095	6.234832
12	Buenos Aires	-75.561797	6.215676
16	Manrique	-75.552469	6.264022
34	La América	-75.611401	6.257857
45	Belén	-75.600665	6.231279
50	Villa Hermosa	-75.540588	6.235784
52	Doce de Octubre	-75.581978	6.303999
61	Santa Cruz	-75.557572	6.291379
84	Popular	-75.547901	6.295110
131	Corregimiento de Altavista	-75.612284	6.220436
155	Corregimiento de San Antonio de Prado	-75.637697	6.191561
353	Corregimiento de San Cristóbal	-75.615032	6.281304
1333	Corregimiento de Santa Elena	-75.547855	6.204482
3064	Corregimiento de San Sebastián de Palmitas	-75.701030	6.327439



Modeling

Using the services of the Foursquare api we use the connection to establish the closest places to carry out the recreational strategy

	Neighborhood	Auto Dealership	Historic Site	Intersection	Metro Station	Pet Store
0	La Candelaria	0	0	0	0	1
1	La Candelaria	1	0	0	0	0
2	La Candelaria	0	0	0	1	0
3	La Candelaria	0	1	0	0	0
4	La Candelaria	0	0	0	1	0

	name	categories	lat	lng
0	Tierragro	Pet Store	6.233322	-75.574169
1	El Roble Motor	Auto Dealership	6.232751	-75.573576
2	METRO - Estación Exposiciones	Metro Station	6.238458	-75.573178
3	Puente de Guayaquil	Historic Site	6.234021	-75.575608
4	METRO - Estación Industriales	Metro Station	6.230728	-75.575426

Modeling

The main places near the point where most traffic accidents occur are Metro Stations, Pet Store, Historic Site and Auto Dealership

	Neighborhood	Auto Dealership	Historic Site	Intersection	Metro Station	Pet Store
0	La Candelaria	0.166667	0.166667	0.166667	0.333333	0.166667

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	La Candelaria	6.234832	-75.575095	Tierragro	6.233322	-75.574169	Pet Store
1	La Candelaria	6.234832	-75.575095	El Roble Motor	6.232751	-75.573576	Auto Dealership
2	La Candelaria	6.234832	-75.575095	METRO - Estación Exposiciones	6.238458	-75.573178	Metro Station
3	La Candelaria	6.234832	-75.575095	Puente de Guayaquil	6.234021	-75.575608	Historic Site
4	La Candelaria	6.234832	-75.575095	METRO - Estación Industriales	6.230728	-75.575426	Metro Station

Conclusion

To carry out strategies on how to prevent traffic accidents in the place where accidents most occur in the city of Medellin, we recommend holding events on prevention, messages and ensuring pedestrian safety in Metro Station specifically in METRO - Station Exposiciones and METRO - Station Industriales

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0 La Candelaria	Metro Station	Pet Store	Intersection	Historic Site	Auto Dealership

