

Road accidents in France

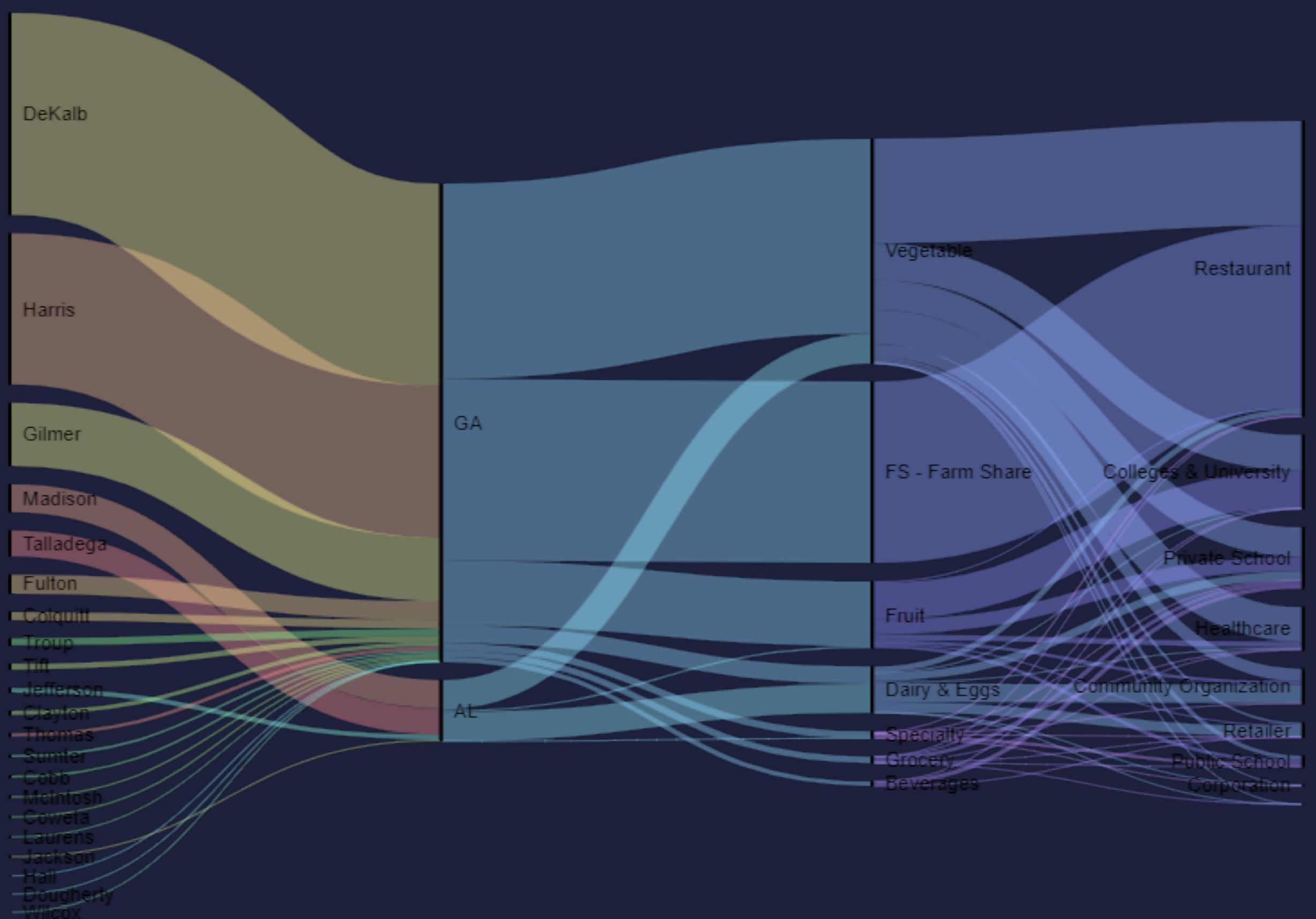
Every year, around **560 billion** kilometers are being travelled by car in France. This is 1.5 million times more than the distance between earth and the moon.

As a direct consequence, yearly, more than 3'500 die yearly on the French roads. Since 2005, the French government has been collecting data about accidents, and open-sourced the data on data.gouv.fr. There are several public actors in France in charge of the road safety : communes, departments, and the state. These actors are responsible for 3 major objectives :

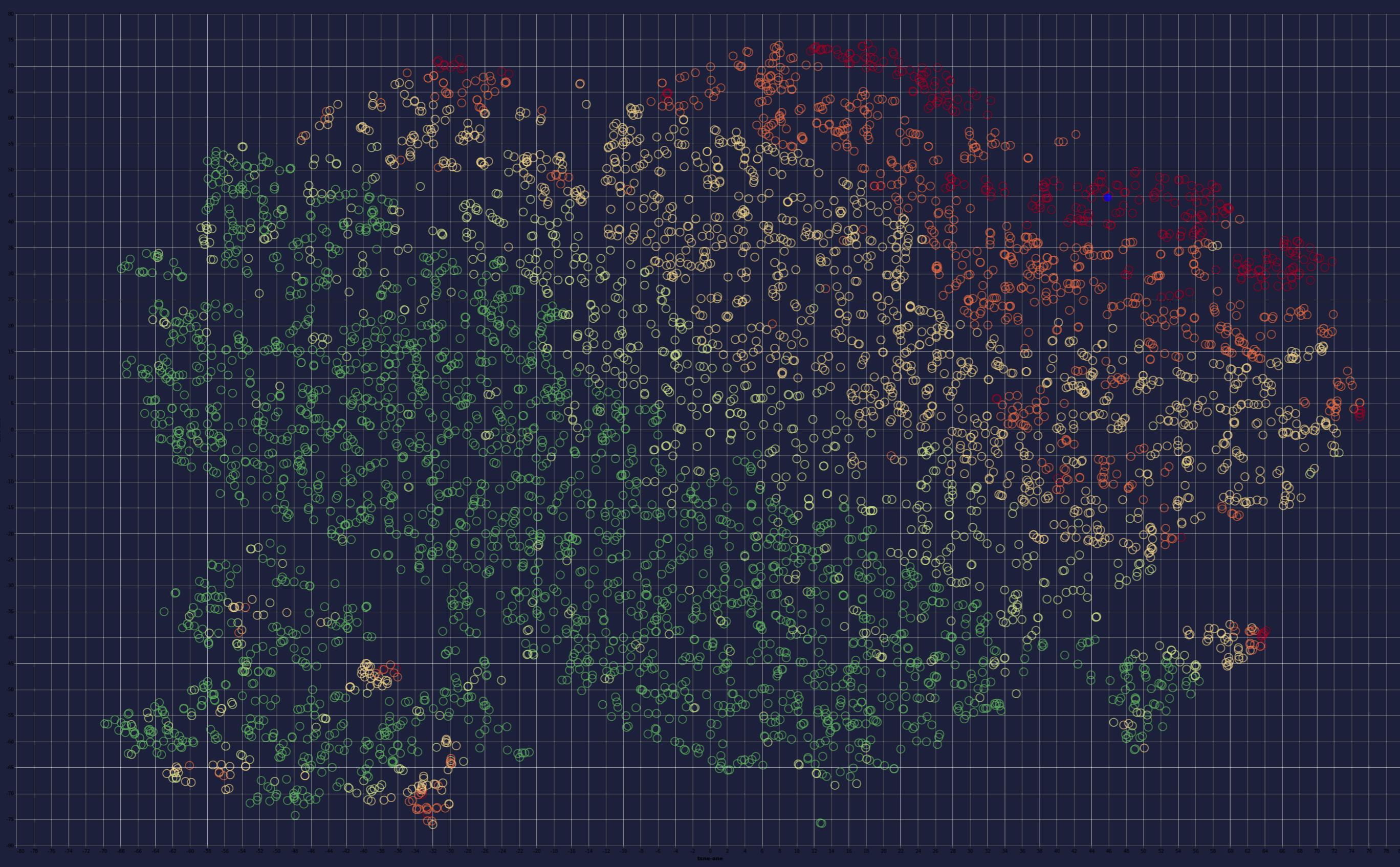
Sensitization

Local police and communes are working together on sensitization of the youngster on the road dangers. One might believe that dangers for these kids arise once they have their first motorcycle or car. However, if they are involved in an accident, death rates among bike riders and pedestrians are incredibly high compared to other transportation means.

In this visualization, we created a Sankey diagram (flow chart) that shows the proportion of pedestrians, bike riders, motorcycles and cars involved in a crash these last 13 years, distinguishes if they were wearing all security equipments, and finally shows the survival rate among each category. This graph clearly illustrates the fragility and the exposure of pedestrians and bike riders, and contributes to sensitization of these populations.



Prevention



Can communes, departments, or even the state prevent crashes before they occur? To answer this vast question, we created a graph whose role is to cluster the types of roads (width, surface, infrastructure, proximity of a school...), and their related accident rate, thanks to a T-SNE embedding.

The user can select the type of road (communal, departmental, national), and in each case, observe the clusters. The green clusters represent a low accident rate, and the red ones a high one.

The user can use his mouse and hover on a given point to observe all the characteristics of a given road.



Thanks to this visualization, we expect road authorities to be able to adjust the characteristics of a road when building or renovating a road.

Monitoring

The last task of road services is to monitor the roads, and the accident rates on each road. Additional security measures might be needed in certain cases, or certain conditions. Local authorities might have an idea of what road is dangerous, but our visualization brings a clear view, at both micro and macro scales, of the overall accident profile of roads.

We also added filters so that the user is able to sort the results according to the time of the accident, the weather conditions, the age of the driver...

By bringing all these interactions together, additional insights can be gained, and some clusters can be found.

