Road Accident Risk Dashboard

About the Data

The dataset to create the Road Accident Risk Analysis dashboard was taken from [Predicting Road Accident Risk] on Kaggle. It includes 517K instances of road data with their road type, accident risk value, number of lanes, curvature, speed limit, lighting, weather, presence of road signs, number of reported accidents, time of the day, if it is a school season, weather conditions and if it is a holiday.

About the Dashboard

This dashboard could be an entrypoint to analyse future road safety related measures taken by police and by automotive manufacturers when designing self-driving automobiles in the future. For example you may refer to the [investigations] on violation of traffic laws by self-driving cars.

The dashboard highlights the road accident risk measures based on the following dimensions:

- Past Accidents
- Road Infrastructure
- Environmental Factors

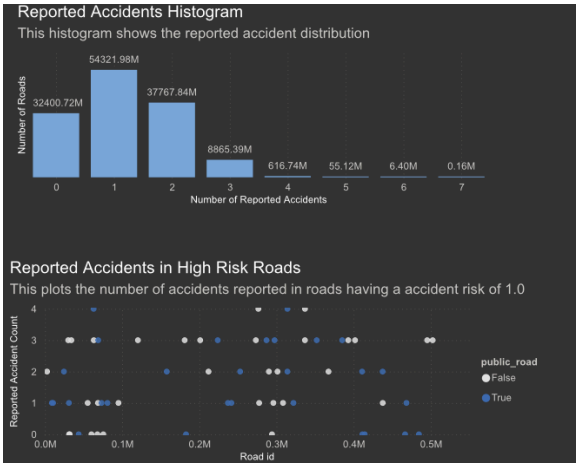
Police Forecast on Road Risks

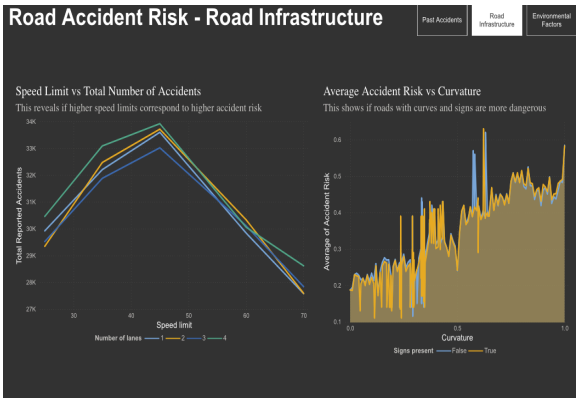
When monitoring the accident prone roads in an area the police would bias the past accident statistics and assume that the roads with the highest number of accidents account for the highest accident risk. The two visualisations in the first screenshot invalidate that assumption as each and every road with the highest risk of 1.0 had a lesser number of past accidents.

This highlights the importance of looking into other factors like the road curvature & weather conditions when distributing the traffic task forces.

The second screenshot has its first visual emphasising that the highest reported number of accidents were from 4 lane roads in most of the speed limits. Then the second visual suggest that the average accident risk has a increase along with road curvature in spite of the presence of road signs.

So the police traffic force can be advised to consider further about the road curvature and the number of lanes when deciding how to increase the traffic capacity in high accident risk roads.

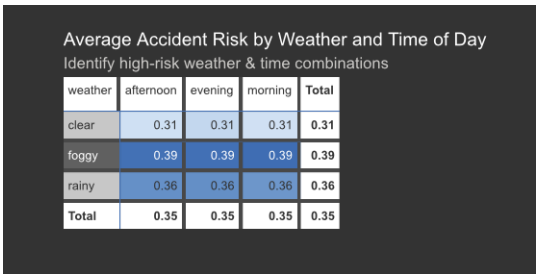




Risk Assessment of Self Driving Cars

The third screenshot tabulates the average accident risk in different times of the day and in different weather conditions. The highest average accounts for foggy conditions.

There should be human driving options to switch into when driving in foggy weather conditions.



weather	afternoon	evening	morning	Total
clear	0.31	0.31	0.31	0.31
foggy	0.39	0.39	0.39	0.39
rainy	0.36	0.36	0.36	0.36
Total	0.35	0.35	0.35	0.35