

Potential Car Accident Severity.

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1 Introduction

1.1 Background

Every year car accidents cause hundreds of thousands of deaths worldwide. According to a research conducted by the World Health Organization (WHO) there were 1.35 million road traffic deaths globally in 2016, with millions more sustaining serious injuries and living with long-term adverse health consequences. Globally, road traffic crashes are a leading cause of death among young people, and the main cause of death among those aged 15–29 years. Road traffic injuries are currently estimated to be the eighth leading cause of death across all age groups globally, and are predicted to become the seventh leading cause of death by 2030[1].

Leveraging the tools and all the information nowadays available, an extensive analysis to predict traffic accidents would make a difference in the death toll. Analysing a significant range of factors, including weather conditions, special events, roadworks, traffic jams among others, an accurate forecasting of future accidents can be performed. Thus, trends that commonly lead to traffic incidents as well as critical spots where accidents are more likely to occur can be identified. These insights, could allow law enforcement bodies to allocate their resources more effectively in advance of potential accidents, preventing further accidents as well as saving both, time and money. In addition, this knowledge of a potential accident situation can be warned to drivers so that they would drive more carefully or even change their route if it is possible.

Consequently, road safety should be a prior interest for governments, local authorities and private companies investing in technologies that can help reduce accidents and improve overall driver safety.

1.2 Problem

Data that might contribute to determining the likeliness of a potential accident occurring might include information on previous accidents such as road conditions, weather conditions, exact time and place of the accident, severity metrics, type of vehicles involved in the accident and information on the driver. This project aims to forecast the severity of potential accidents.

1.3 Interest

Governments should be highly interested in accurate predictions of the severity of an possible accident, in order to reduce the number of incidents which can cause the deaths of a significant amount of people each year. Others interested could be private companies investing in technologies aiming to improve road safeness.

2 Data

2.1 Data source

The data can be found in the following Kaggle data set [click here](#).

2.2 Description

The data is divided in 5 different data sets, consisting of all the recorded accidents in France from 2005 to 2016. The *characteristics* data set contains information on the time, place, and type of collision, weather and lighting conditions and type of intersection where it occurred. The *places* data set has the road specifics such as the gradient, shape and category of the road, the traffic regime, surface conditions and infrastructure. On the *user* data set it can be found the place occupied by the users of the vehicle, information on the users involved in the accident, reason of traveling, severity of the accident, the use of safety equipment and information on the pedestrians. The *vehicle* data set contains the flow and type of vehicle, and the holiday one labels the accidents occurring in a holiday. All five data sets share the accident identifications number. A more extensive description on each specific features can be found on the [notebook](#).

References

- [1] Alexander Popov. *Road Traffic Injuries*. WHO, Global Health Observation Data, 2016.
https://www.who.int/health-topics/road-safety#tab=tab_1