Car Accident Severity

Capstone Project Report

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1.   Background

Every year car accidents cause hundreds of thousands of deaths worldwide. According to a research conducted by the World Health Organization (WHO) , Road traffic crashes result in the deaths of approximately 1.35 million people around the world each year and leave between 20 and 50 million people with non-fatal injuries. More than half of all road traffic deaths and injuries involve vulnerable road users, such as pedestrians, cyclists and motorcyclists and their passengers.

The young are particularly vulnerable on the world's roads and road traffic injuries are the leading cause of death for children and young adults aged 5-29. Young males under 25 years are more likely to be involved in road traffic crashes than females, with 73% of all road traffic deaths occurring among young males in that age. Developing economies record higher rates of road traffic injuries, with 93% of fatalities coming from low- and middle- income countries.

In addition to the human suffering caused by road traffic injuries, they also incur a heavy economic burden on victims and their families, both through treatment costs for the injured and through loss of productivity of those killed or disabled. More broadly, road traffic injuries have a serious impact on national economies, costing countries 3% of their annual gross domestic product.

Measures proven to reduce the risk of road traffic injuries and deaths exist and the 2030 Agenda for Sustainable Development has set ambitious targets for reducing road traffic injuries.
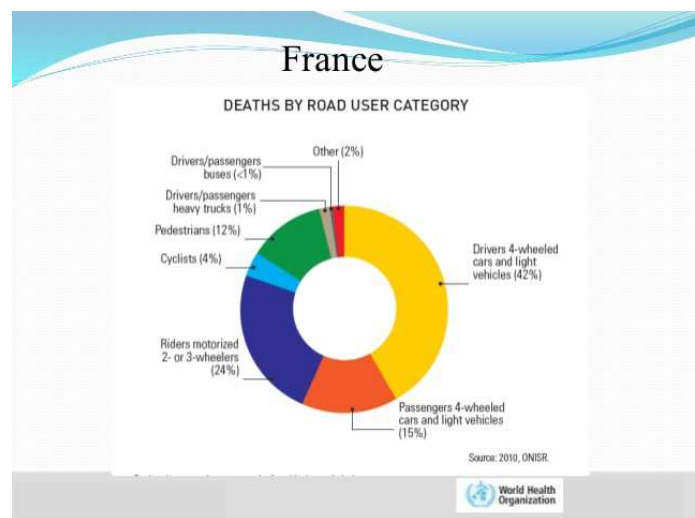
Leveraging the tools and all the information nowadays available, an extensive analysis to predict traffic accidents and its severity would make a difference to the death toll. Analysing a significant range of factors, including weather conditions, locality, type of road and lighting among others, an accurate prediction of the severity of the accidents can be performed. Thus, trends that commonly lead to severe traffic incidents can help identifying the highly severe accidents. This kind of information could be used by emergency services, to send the exact required equipment to the place of the accident, leaving more resources available for accidents occurring simultaneously. Moreover, this severe accident situation can be warned to nearby hospitals which can have all the equipment ready for a severe intervention in advance.

2.   Interest

Obviously, 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.

3.   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, type of vehicles involved in the accident, information on the users involved in the accident and of course the severity of the accident. This projects aims to forecast the severity of accidents with previous information that could be given by a witness informing the emergency services.