The Prediction of Car Accidents Severity

IBM Applied Data Science Capstone

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1. Introduction

Motor vehicle crashes have been resulted in many deaths and injuries in the world. For example, based on the U.S. National Highway Traffic Safety Administration (NHTSA), there were 37,461 people killed in crashes on U.S. roadways during 2016, an increase from 35,485 in 2015. As another example, distracted driving caused 1.25 million deaths worldwide in 2015, with an estimated 3,477 deaths in the United States alone [1].

By analyzing some factors such as weather condition, road condition, and the speed of cars, some effective machine learning algorithms can be developed to predict the severity of car accidents before they would actually occur. Such intelligent systems can mitigate the number of deaths and injuries by warning drivers so that they would drive more carefully or even take another route if they could. As a result, the driving safety could be improved dramatically.

1.2 Business problem

Governments would be highly interested in such systems with the ability to predict the severity of car accidents ahead of time because they could save more lives by reducing the time of transporting the injured people to nearby hospitals for treatment. The faster the proper medical care is provided, the greater the chance of survival is for injured people in road accidents. Hospitals could also reap the benefits of such systems by getting prepared in advanced to admit injured people involved in accidents. Car companies would also be interested in equipping their products with such intelligent systems to alert drivers in advance and in turn increase the car safety. Thus, the main objective of this project is to train an effective machine learning model by which the severity of car accidents can be predicted.