Capstone Project – Car accident severity

CHENG YAT YEUNG

Background Description

Traffic collision, also called car accident, is one of the most common accidents in modern society. It often results in injury, disability, death, and property damage as well as financial costs to both society and the individuals involved. In 2013, 54 million people worldwide sustained injuries from traffic collisions, and also caused 1.4 million deaths. Therefore, it raises a serious concern for many citizens around the world.

Our motivation is to predict the accident severity of any road, which will play a crucial factor for traffic control authorities to take proactive precautionary measures.

Problem Description

Car accidents can take place due to serval reasons, for example, vehicle design, driver negligence, road environment, traffic condition etc. Therefore, it is important to predict the severity of the car accidents under different conditions. And the purpose of this project is to predict the severity of an accident, the cause for these accidents and suggest how to reduce the number of accidents by training an efficient machine learning model with the help of existing accidents data.

Data Description

The dataset used in this project contains data about car accidents provided by SPD and recorded by Traffic Records. The dataset provides several attributes such as the weather during the time of accident (WEATHER), road condition (ROADCOND), visibility of the area (LIGHTCOND) and type of road junction (JUNCTIONTYPE).

The label for the data set is 'SEVERITYCODE' (Target variable), which describes the fatality of an accident, it can be measured and predicted the severity of an accident based on a scale of 0-5.

0: Little to no Probability (Clear Conditions)

1: Very Low Probability – (Chance or Property Damage)

2: Low Probability – (Chance of Injury)

3: Mild Probability – (Chance of Serious Injury)

4: High Probability – (Chance of Fatality)