Prediction of car accident severity

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1. Introduction

1.1 Background

According to the WHO[1], even though vehicles have become much safer in the last decades, every year around 1.35 million people still die because of a road traffic crash and between 20 and 50 million more people suffer non-fatal injuries with many incurring a disability.

If we take a different perspective and consider the economic impact at national level, road traffic accidents also cost around 3% of gross domestic product to most countries[2].

Therefore, there is a great interest in different parts of society (such governments, decision-makers, carmakers, drivers, insurance companies) in changing and decreasing this trend.

1.2 Problem

A solution that would reduce the number of incidents could be the chance to warn a driver about the possibility of getting into a car accident and how severe that incident would be, given the weather and road conditions. In this way people would drive more carefully or even stay home.

Transforming this solution into a machine learning problem, I used a dataset provided by a city and its police department (in our case Seattle City and the SPD - Seattle Police Department) to predict the severity (and its probability) of an accident based on the conditions of weather, light and the road.

[1] "Road traffic injuries", World Health Organisation (WHO), 07/02/2020, https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries

[2] Ibid.