Car accident severity prediction for insurance companies

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Introduction / Business Problem

Predicting the cost, and hence the severity, of claims in an insurance company is a real-life problem that needs to be solved in a more accurate and automated way. Although it is generally considered a smart decision for the car owners to hire a car accident attorney following a crash, in minor collisions, owners can save on lawyer fees by handling the insurance claim themselves. This task makes the insurance companies engage in ample research beforehand by consulting resources and requesting a consultation on how to predict the severity of an accident and in turn the damage that needs to be covered. The overall paper-based process to calculate the severity claim is a tedious task to be completed. This is why insurance companies are continually seeking fresh ideas to improve their claims service for their clients in an automated way. Therefore, predictive analytics is a viable solution to predicting the cost, and hence severity, of claims on the available and historical data.

Background

Insurance companies use a variety of methods to calculate the value of the claim, many of which are different forms of the multiplier method. Unlike lawyers, however, insurance companies rarely use whole numbers as multipliers and instead utilize complex computer algorithms to determine the multiplier.

Generally, there are two reasons people criticize the multiplier method. One criticism is focused on the argument of arbitrary multipliers, meaning that due to the fact that different attorneys use different multipliers, the results are often inconsistent. For example, one attorney may triple the special damages, while another might apply a multiplier of six, opening up a wide gap of variance between the two estimated sums. Additionally, the multiplier method can produce misleading results. The multiplier method can fail to account for more long-term costs and immaterial damage that will affect someone for the rest of their life.