IBM – Coursera

IBM Data Science Professional Certificate

Capstone project – week2 report

SUBJECT: CAR ACCIDENT SEVERITY

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1. Introduction

The IBM Data Science Professional certification course on Coursera concludes with a Capstone Project. This project is about using data science tool-set on a real-life problem: the traffic collision. I present here the summary of my project. The analysis was performed in Python. The details analysis is specified in the Jupyter notebook on Github.

2. Business problem

For this project, I choose a hypothetical business problem.

I'm driving to another city to visit some friends. It is rainy and windy, and on the way, I come across a terrible traffic jam on the other side of the highway. Long lines of cars barely moving and the police shutting down the highway. It is a terrible accident and they must be in critical condition for all of this to be happening. Hence, it will great if there is something in place that could warn you. By giving the weather information and the road conditions, we need to know the possibility of getting into a car accident and how severe it would be.

The assumption behind the analysis is that we can use supervised machine learning to predict the severity based on historical traffic collision data, whose severity was considered by the police. With this model, we can develop an mobile application to warn the driver in real-time.

3. Data

To perform this analysis, we need the following data:

- Accident location
- Road conditions
- Weather condition
- Junction
- Car speeding
- Number of people involved
- Light conditions
- Number of vehicles involved in

These information can be obtained from Seattle Department of Transportation (SDOT). SDOT has an open data platform which can be found in "https://data.seattle.gov/". In this platform, they update their information about collisions weekly. We can find all information we need in this dataset. The attribute information details can be found in "https://www.seattle.gov/Documents/Departments/SDOT/GIS/Collisions_OD.pdf".