Problem Description

Traffic accidents are a common occurrence of everyday life. These can cause material losses, personal injury, emotional distress, traffic disruption and unfortunately in some cases death. In many countries and cities there is an increased amount of cars on the road. Various reasons can be attributed to this rise in traffic:

- Increased population
- Lack or unreliable public transport
- Low cost of cars
- Increased disposable incomes

Due to the increase of cars on the road and potential accidents, it is essential to understand the causes of accident severity which would be useful for various bodies such as police departments, hospitals, insurance companies, transport companies, among many others.

These stakeholders will benefit of these predictions by being able utilise their resources more efficiently. For example hospitals would be able to have staff available only in times when conditions are higher for more severe accidents and reduce staff when it is lower. This would be a similar situation for police departments.

Insurance companies would be able to understand when and why high severity accident happens. For example if road condition is a large factor, they might incentivise customers to have a more stringent tyre changes or use snow tyres.

Transport companies like taxis might avoid certain days or conditions when a high number of severe accidents happen.

The objective of the capstone project is to predict the severity of a traffic accident in Greater Manchester, England. Using data science and machine learning techniques, this project will analyse accident data from 2018 to understand the factors that affect the severity of an accident.