**Predicting Severity and Causes of Car Accidents**

Business Problem

Statistics reveal that road accidents are extremely common. According to Budget Direct, a market giant in insurance in Australia, the global average of road fatalities is 18.2 deaths per 100000 people with a rate of 3 deaths daily. The impact of the road accidents greatly impacts on the society in terms of the lives lost and properties destroyed. In this regard, recent years has been critical in determining the factors that leads to accidents on road. With the development of scalable data mining techniques and tools, exploring the capability of analysing real-world large data sets to model car accidents is gaining extreme attention.

Data

USA records 10.6 deaths per 100000. In this study we analyse historical road accident data from the department of Police in the City of Seattle. The data details information on nearly .2 million car accidents collected for more than 15 years from Jan-2004 to Sept-2019. The data set contains 37 characteristics related to each of the accidents. To build a model that predict the severity of Car accidents (SEVERITYCODE – 1 or 2) we are aiming to use the following attributes.

*• ADDRTYPE: Collision address type: Alley, Block, Intersection*

*• WEATHER: A description of the weather conditions during the time of the collision*

*• ROADCOND: The condition of the road during the collision*

*• VEHCOUNT: The number of vehicles involved in the collision*

*• PERSONCOUNT: The total number of people involved in the collision*

*• PEDCOUNT: The number of pedestrians involved in the collision*

*• PEDCYLCOUNT: The number of bicycles involved in the collision*

*• LIGHTCOND: The light conditions during the collision*

*• SPEEDING: If speeding was a factor in the collision (Y/N)*

*• SEGLANEKEY: A key for the lane segment in which the collision occurred*

*• CROSSWALKKEY: A key for the crosswalk at which the collision occurred*

*• HITPARKEDCAR: If the collision involved hitting a parked car*

*• LOCATION: Description of the general location of the collision*

*• JUNCTIONTYPE: Category of junction at which collision took place*