**Car Accident Severity Analysis (IBM Capstone Project)**

**Introduction**

Accidents in traffic lead to associated fatalities and economic losses every year worldwide and thus is an area of primary concern to society from loss prevention point of view. According to preliminary estimates from National Highway Traffic Safety Administration (NHTSA), 36,120 people died in motor vehicle crashes in [2019](https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812946), down 1.2 percent from 36,560 in 2018. Among all countries, the USA has the largest economic burden of road injuries of $487 billion, followed by China ($364 billion) and India ($101 billion); according to a research journal published by THE LANCET.

Reducing traffic accidents is an important public safety challenge around the world. Accident prediction is important for optimizing public transportation, enabling safer routes, and cost-effectively improving the transportation infrastructure, all in order to make the roads safer.

**Major Stakeholders**

* Travelers
* Insurance Companies
* State Health Department
* Emergency Services
* Infrastructural Development Authorities
* Families of the Travelers
* Taxpayers

**Problem**

There is a lack of awareness amongst travelers regarding the risks they might be facing while taking certain routes, crossing certain areas, driving at a specific speed, driving on a specific road, and being inattentive while driving, etc. High-accident-prone areas are seldom inspected with regards to road maintenance, and deployment of additional emergency services personnel, causing additional damage caused by road accidents.

**Goal**

This project aims to predict whether an accident that happens under a specific set of circumstances will be an accident limited to property damage or if it will include some form of physical injury to the driver and/or the passengers. The goal of accident prediction is usually to provide a measure of the risk of accidents at different points in time and space. The occurrence of an accident is the label used to train the model, and the proposed model can be used to identify where and when the risk of accident is significantly higher than average in order to take actions to reduce that risk.