

# Car Accident Severity Prediction

Ruth Hashkes

September 25, 2020

## 1. Introduction

### 1.1 Background

Thousands of car collisions happen yearly in Seattle, some of them of high severity and even fatal. Many factors contribute to determining the severity of a car accident, including weather, type of vehicle involved, driving under the influence and so on. Seattle Police Department has released a dataset with many details of car collisions in an attempt to predict them and reduce the rate and severity of them.

### 1.2 Business Problem

Prediction of severity of a car collision would be beneficial to many entities, starting with the drivers themselves who could drive more carefully, or change route altogether, or insurance companies who could determine insurance policies based on location data with regard to collision severities, and of course to decision makers and local infrastructure supervisors who could change these predictions by directly addressing road quality factors that might be contributing to this issue.

## 2. Data

The Seattle Collisions Dataset consists of 194,673 car collisions from 2004-2019 with 37 attributes. This data was collected and shared by the Seattle Police Department and Accident Traffic Records Department. The label of our dataset (the dependent variable) is Severity, containing two levels: high (Injury Collision) and low (Property Damage Only Collision). Some attributes for example are Collision Type (Head On, Parked Car, etc.), Junction Type (Mid-Block, Intersection, etc.), Weather (Raining, Fog, etc.), and more.