

## Introduction

Weather and road conditions can lead to the severity of accidents when correlating it to human fatalities, traffic delays, as well as property damage. In Seattle, where there are more accidents due to weather conditions because of the climate of the Pacific Northwest. Although weather may be a continuous factor in contributing to accidents, we also want to look at different attributes in order to determine how to lower this severity factor. Based on the given data, we want to predict how to avoid increasing the accident severity by looking at location, address, collision, weather and road conditions, and speed.

## Data

The data used is collected from Seattle SDOT Traffic Management Division from 2004 to present. To narrow down the attributes and focus on our main objective we will highlight SEVERITYCODE as our dependent variable as it is based on other following attributes. We can see which of the following attributes will use in order to predict how impactful they are to severity of accidents.

SEVERITYCODE is code that corresponds to the severity of the collision

0	Unknown
1	Property Damage
2	Injury
2b	Serious Injury
4	Fatality

Variables that will be considered in this prediction will include:

ADDRTYPE: Collision address type: Alley, Block, Intersection

LOCATION: Description of the general location of the collision

PERSONCOUNT: The total number of people involved in the collision

PEDCOUNT: The number of pedestrians involved in collision

PEDCYLCOUNT: The number of bicycles involved in the collision

VEHCOUNT: The number of vehicles involved in the collision

JUNCTIONTYPE: Category of junction at which collision took place

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

ROADCOND: The condition of the road during the collision

LIGHTCOND: The light conditions during the collision

SPEEDING: Whether or not speeding was a factor in the collision

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

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

HITPARKEDCAR: Whether or not the collision involved hitting a parked car