By Evaristo Acosta

Car Accidents in Seattle

Deaths in -or by- automobiles are a pressing public health concern. It is the second leading cause of accidental death in the country.

In 2018, Seattle alone had over 180 traffic accidents that resulted in serious injury or death. Since 2015, Seattle has made it its goal to drop the number of accidents to 0 by 2030, using Sweden's Vision Zero plan.

What can we do to reduce the number of collisions and their severity?

The goal is to use data that can help determine which characteristics increase the severity of accidents, such as road conditions, weather conditions, the exact time and location of the accident.

The Dataset

The dataset contains a table with several caracteristics of each colission reported.

There are 194,673 colissions reported since 2004 to the present.

In thease accidents where involved:

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Total number of people involved in collisions:  475864
Total number of vehicles involved in collisions:  373924
The number of bicycles involved in collisions:  5527
The number of pedestrians involved in collisions:  7230
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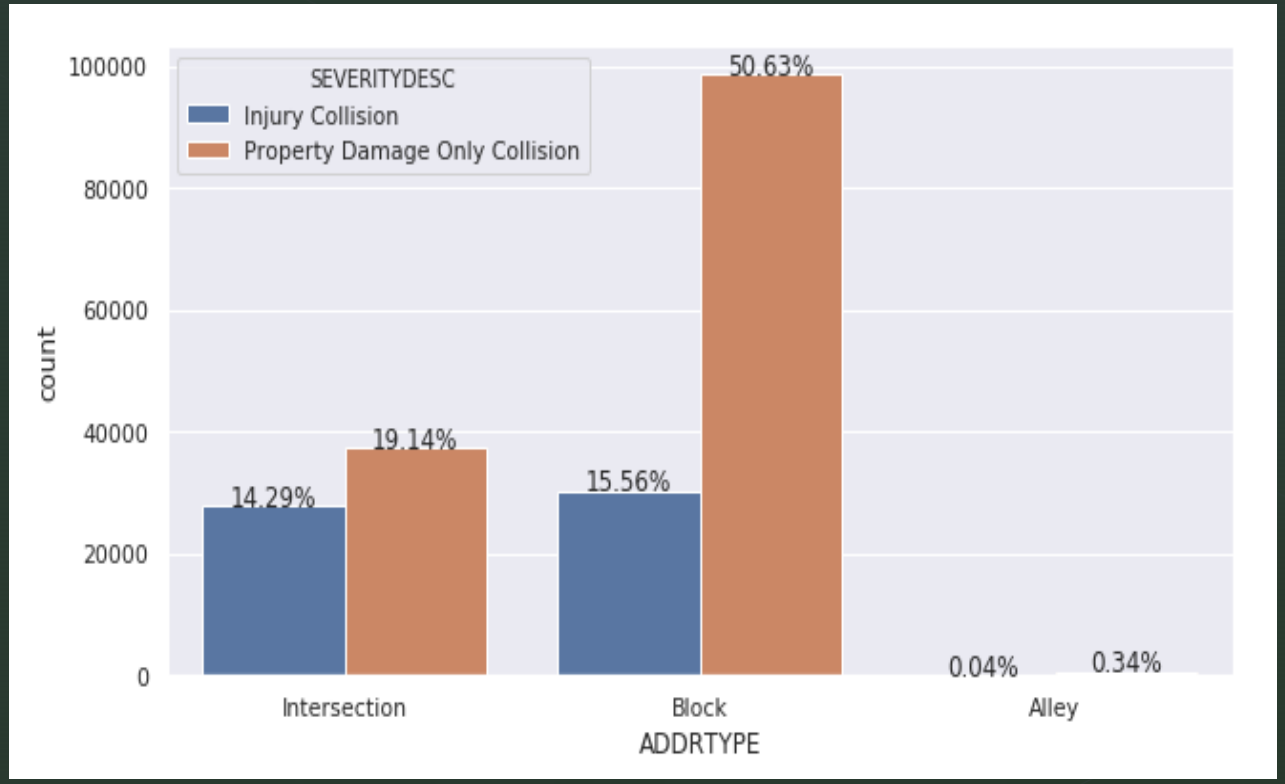
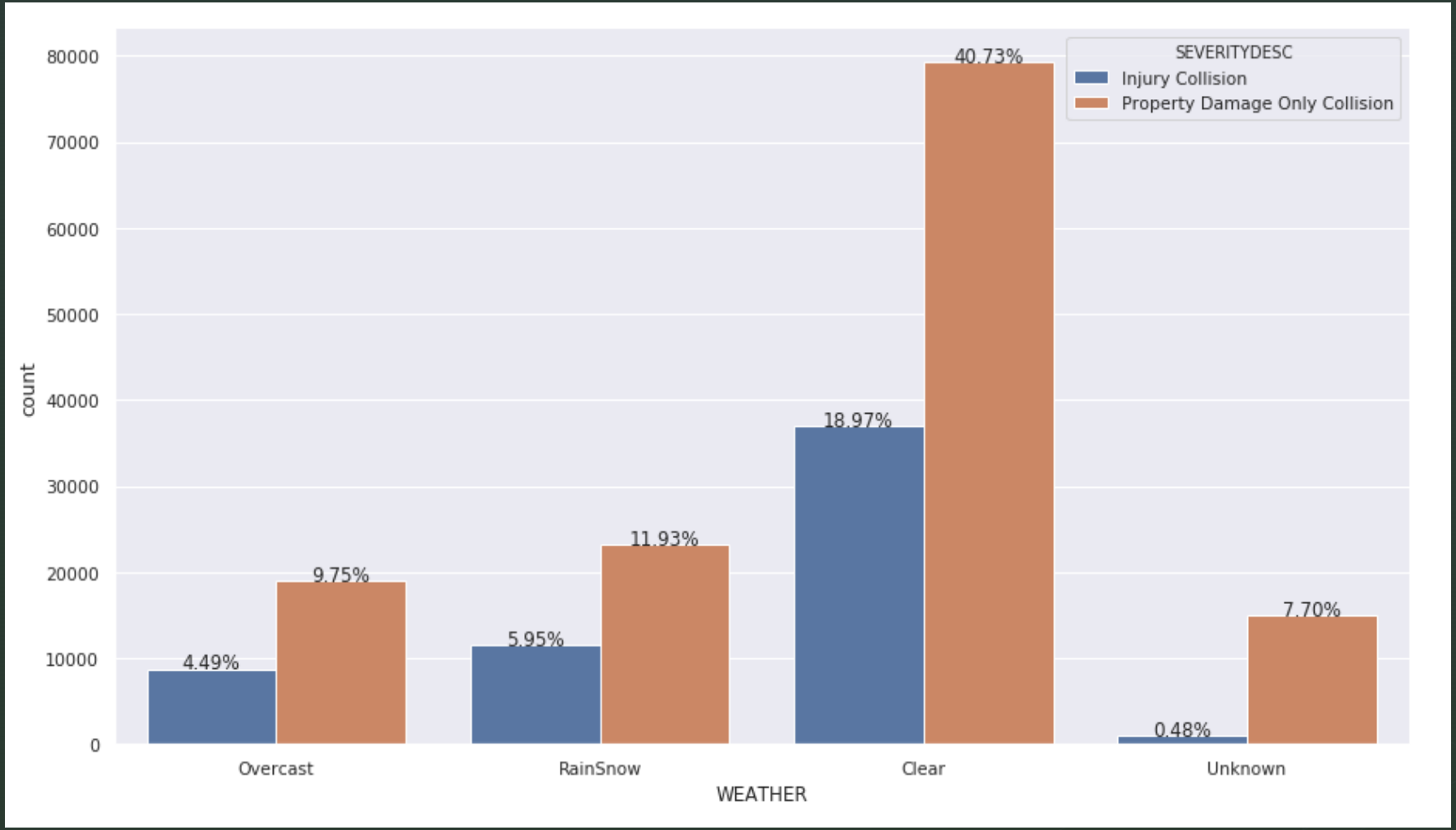
Data Analysis
ANALYZING USING VISUALIZATION

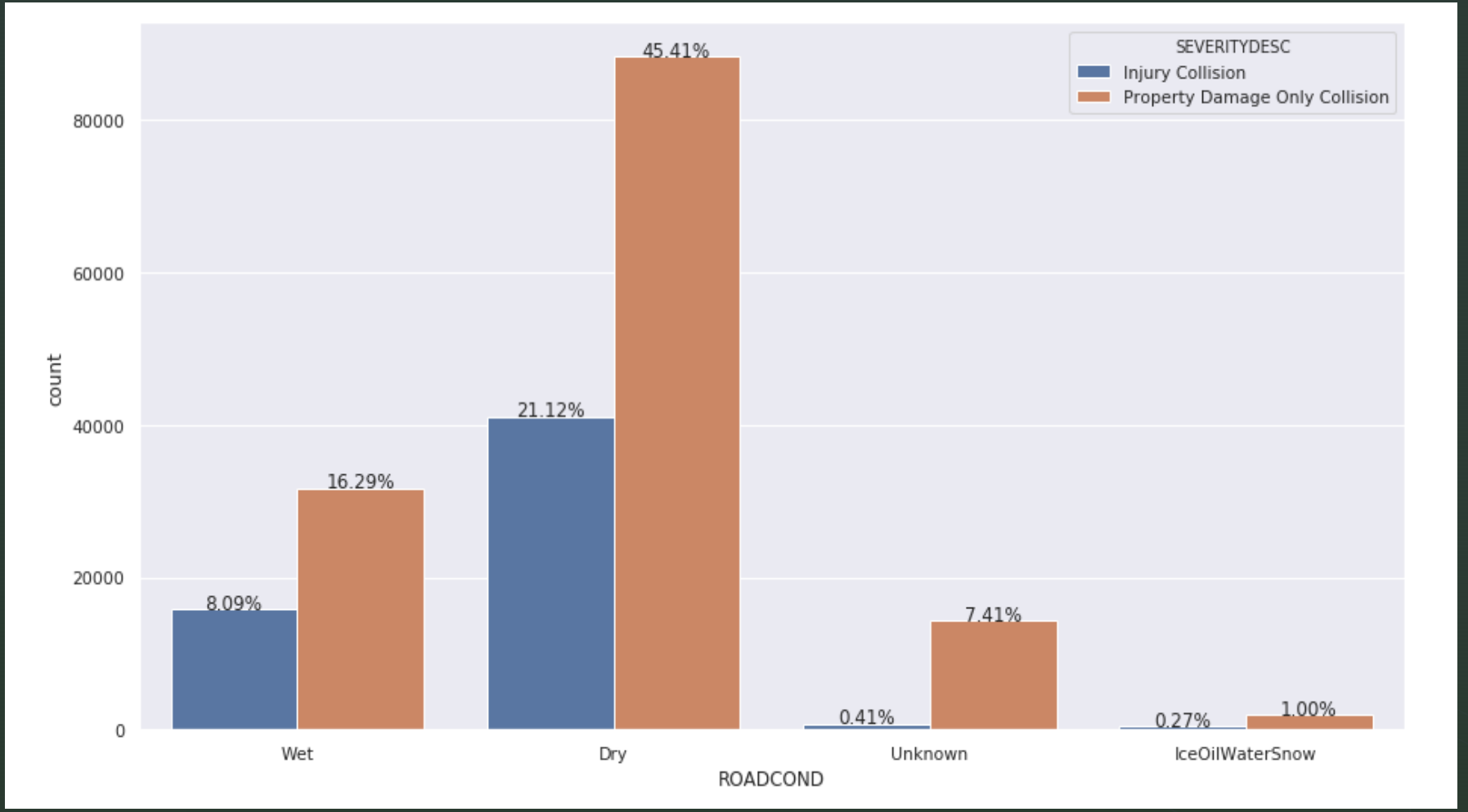
- Location



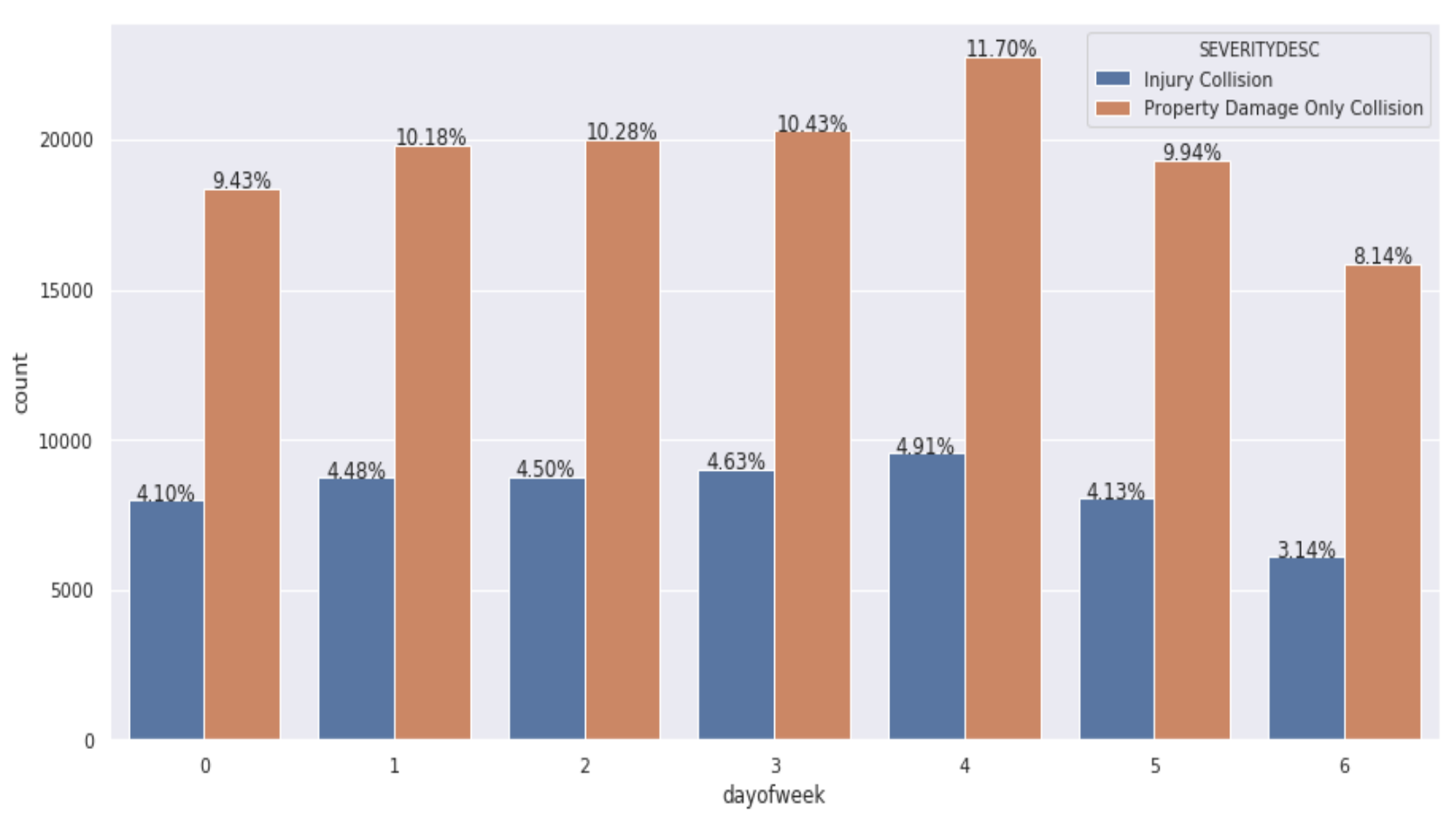
- Weather


SEVERITYDESC
Injury Collision
Property Damage Only Collision
count
80000
70000
60000
50000
40000
30000
20000
10000
0
4.49%
9.75%
5.95%
11.93%
18.97%
40.73%
0.48%
7.70%
Overcast
RainSnow
Clear
Unknown
WEATHER

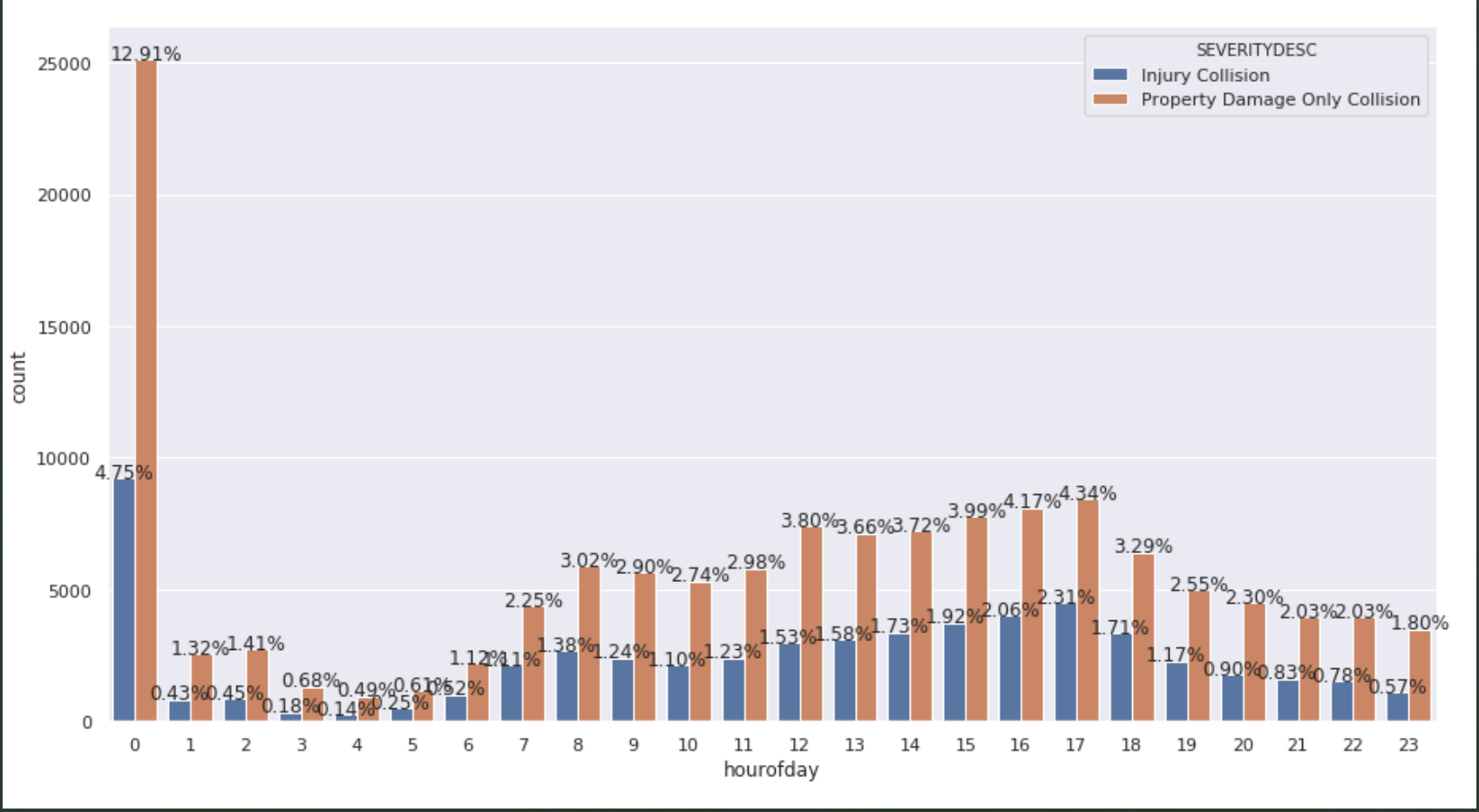
- Road condition



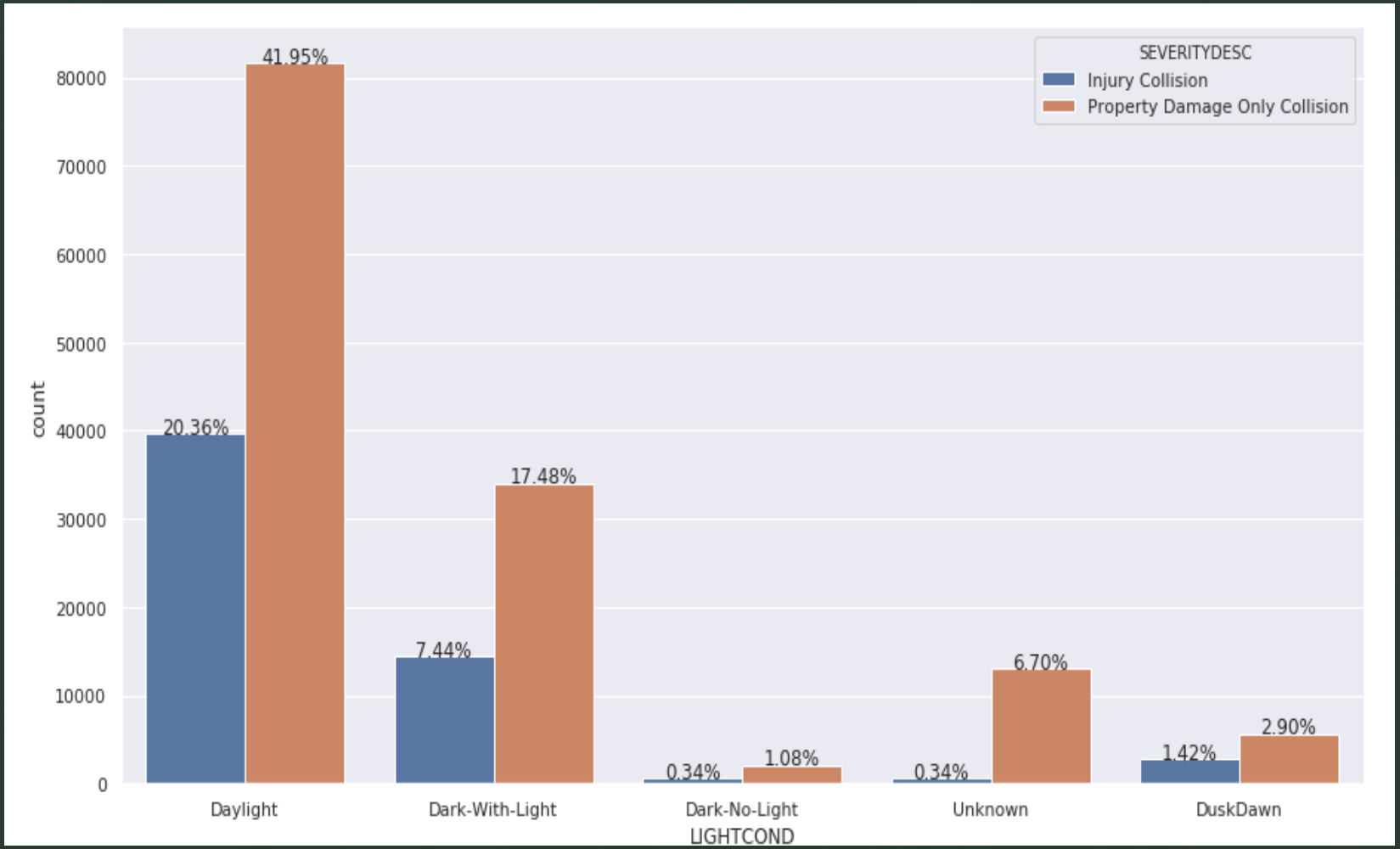
- Days of the week



- Hours of the day



- Light Condition



Machine Learning

Alogorithm	Average F-1 Score	Type	Precision	Recall
Decision Tree	0.61	Property collision	0.80	0.56
		Injury Collision	0.39	**0.67**
k-Nearest Neighbor	0.60	Property collision	0.74	0.65
		Injury Collision	0.36	**0.46**
Logistic Regression	0.61	Property collision	0.71	0.97
		Injury Collision	0.45	**0.06**