Predicting car accidents severity

Predicting car accidents is valuable to drivers

Generally severity of accident's can be predicted based on past accidents at a particular location based on other parameters like weather, time etc. More towards accurate predictions helps driver to stay safe indoors or to divert route accordingly.

Such value is recognized by traffic controlling teams. So that they can put the rescue team ready for such accidents if any to occur.

Predicting accidents help improve overall traffic situation. And also drivers can plan accordingly.

Data

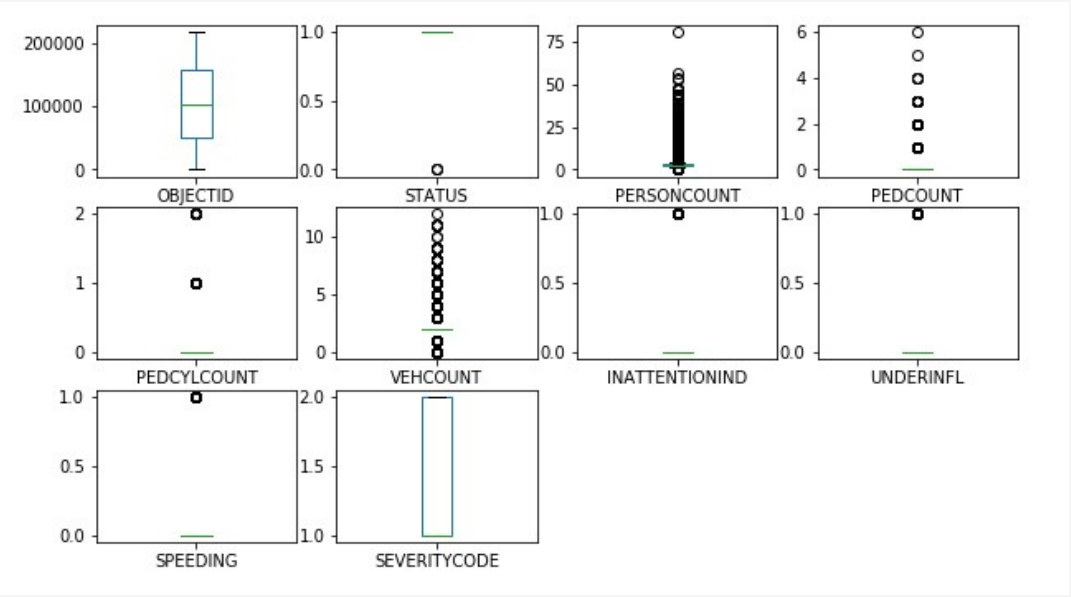
- All collisions provided by SPD and recorded by Traffic Records.
- Collision data from Seattle police department has 37 attributes. Based on which will be of use some of them can be dropped.
- Collisions will display at the intersection or mid-block of a segment. Timeframe: 2004 to Present.
- Collision data has total of 194673 rows.

Data correlation

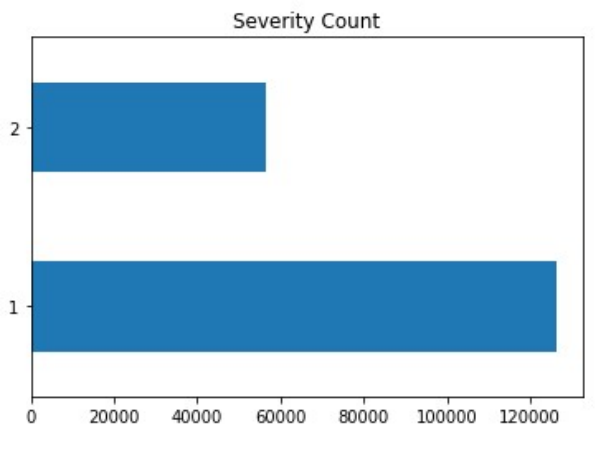
- Method : Pearson

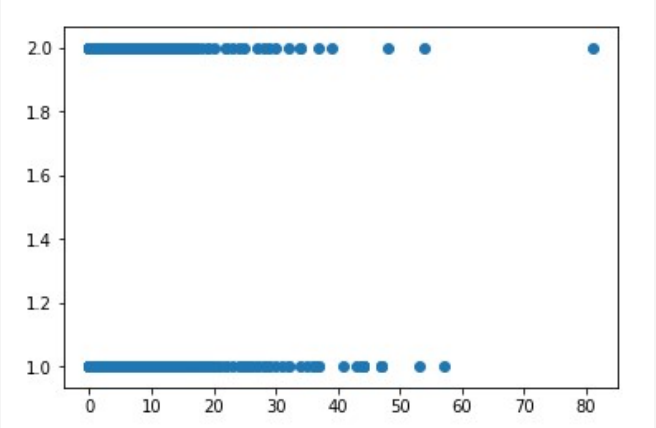
Data correlation

- Outlier’s
- Method : Box plot



Data correlation – Scatter plot





Balancing Data Set

- Method – IMBLEARN

Before Balancing			After Balancing	
1	84748		1	75960
2	37980		2	75960

- Method – Random Forest Classifier

Algorithm	Confusion Matrix		Precision	Recall	F1 Score	Accuracy
RandomForestClassifier	21999	15261	73	71	71	71
	6110	31461				