Chicago Car Crash

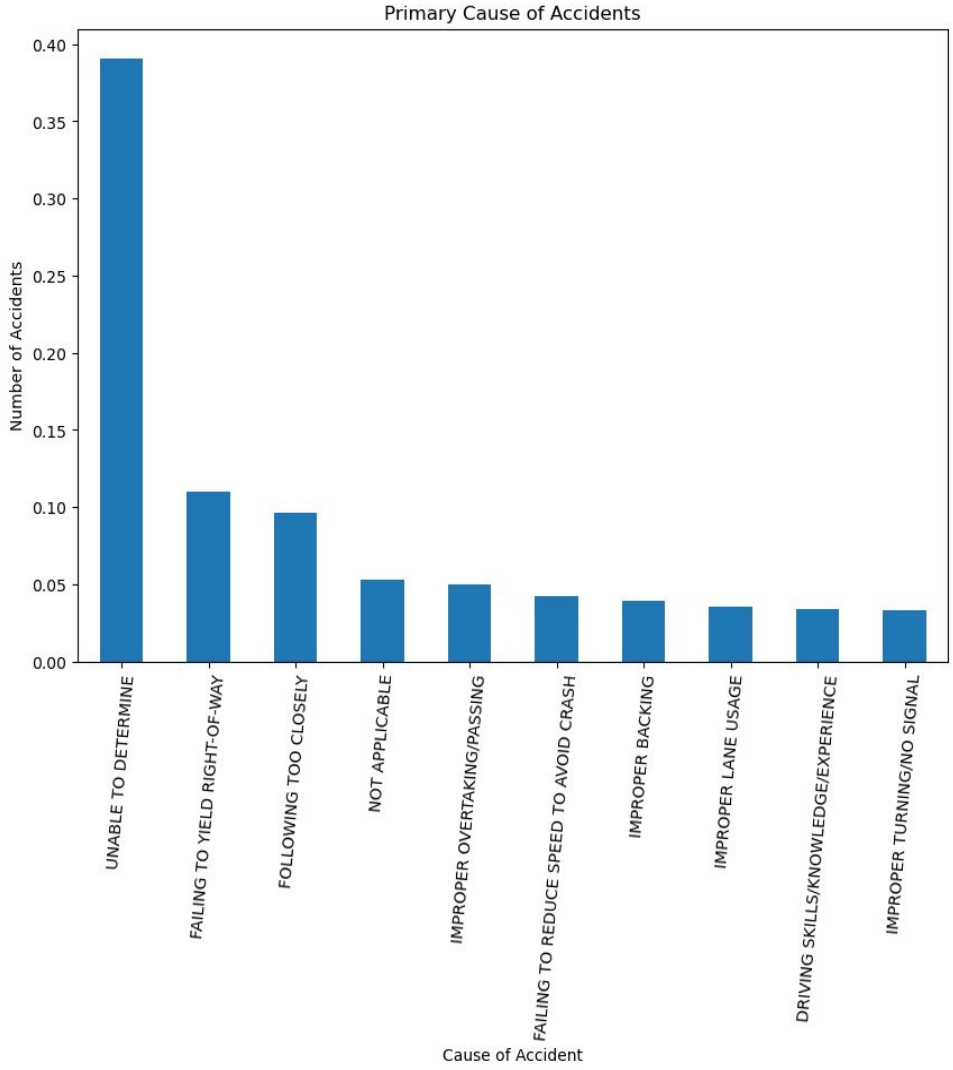
Predicting the severity of a car crash

The Data Set

- The data acquired is from Chicago Police Department crash data set link below: https://data.cityofchicago.org/Transportation/Traffic-Crashes-Crashes/85ca-t3if
- This data set has more than half a million records of car crashes
- It has the details of the date, location, time, number of units and cause of accident
- It also provides road conditions, weather, traffic, work zone and the severity

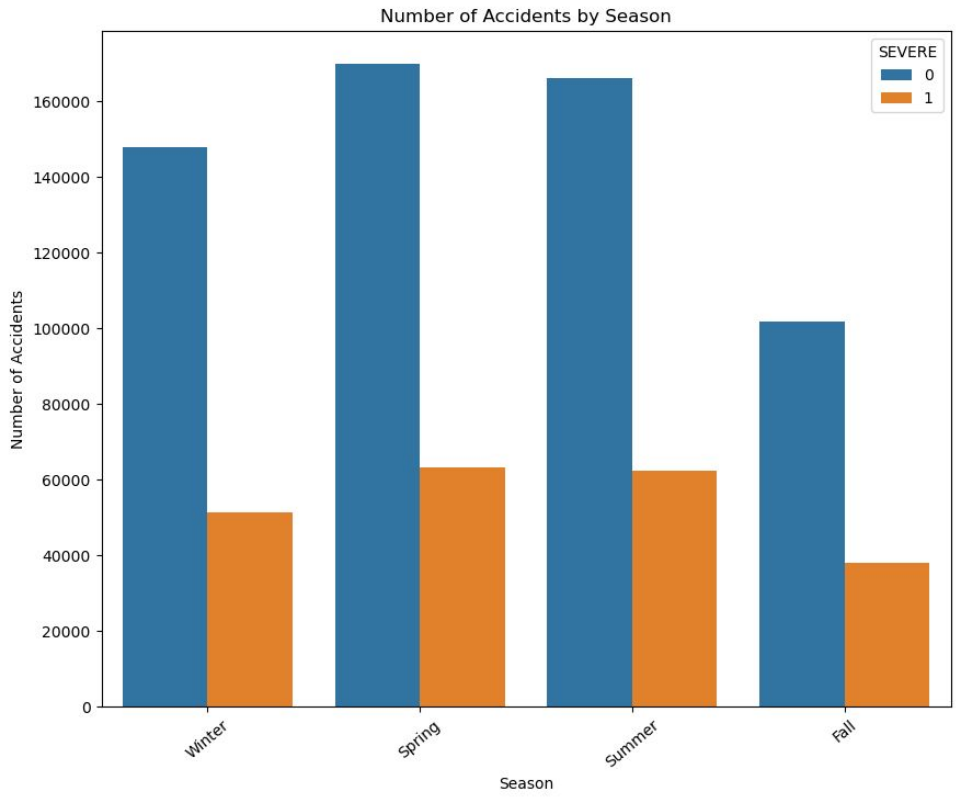
Primary Cause of Accidents

The chart shows the top 10 primary causes of car crashes



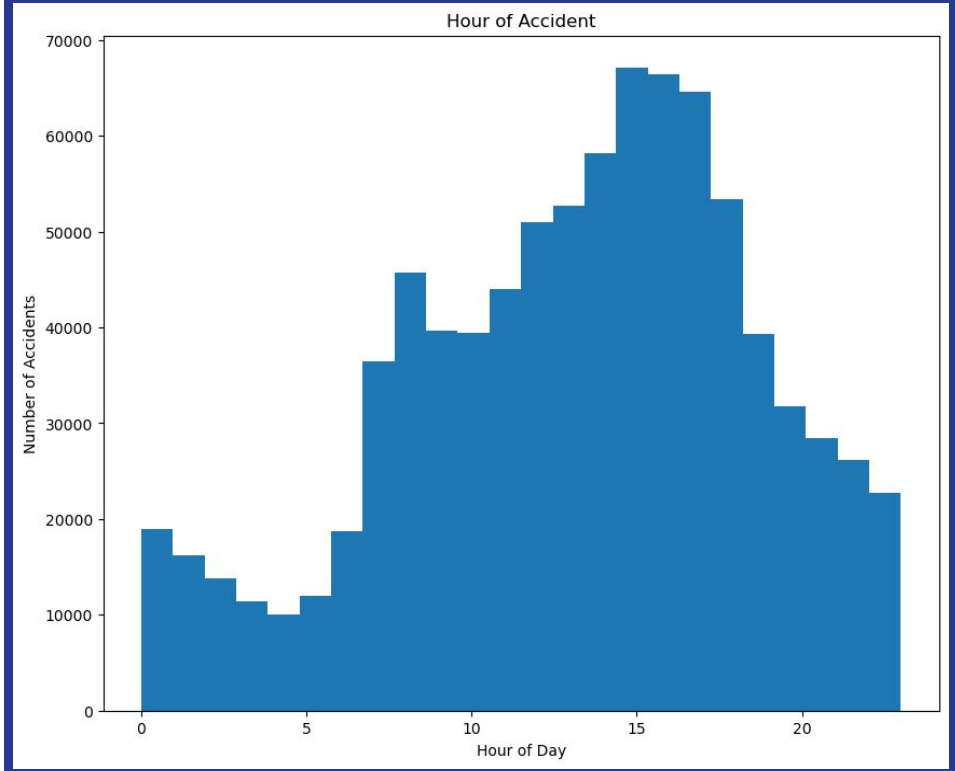
Number of Accidents by Seasons

- The chart shows the number of accidents that occurred in each season.
- The blue bar indicates the non severe car accidents.
- The orange bar indicates the severe accidents



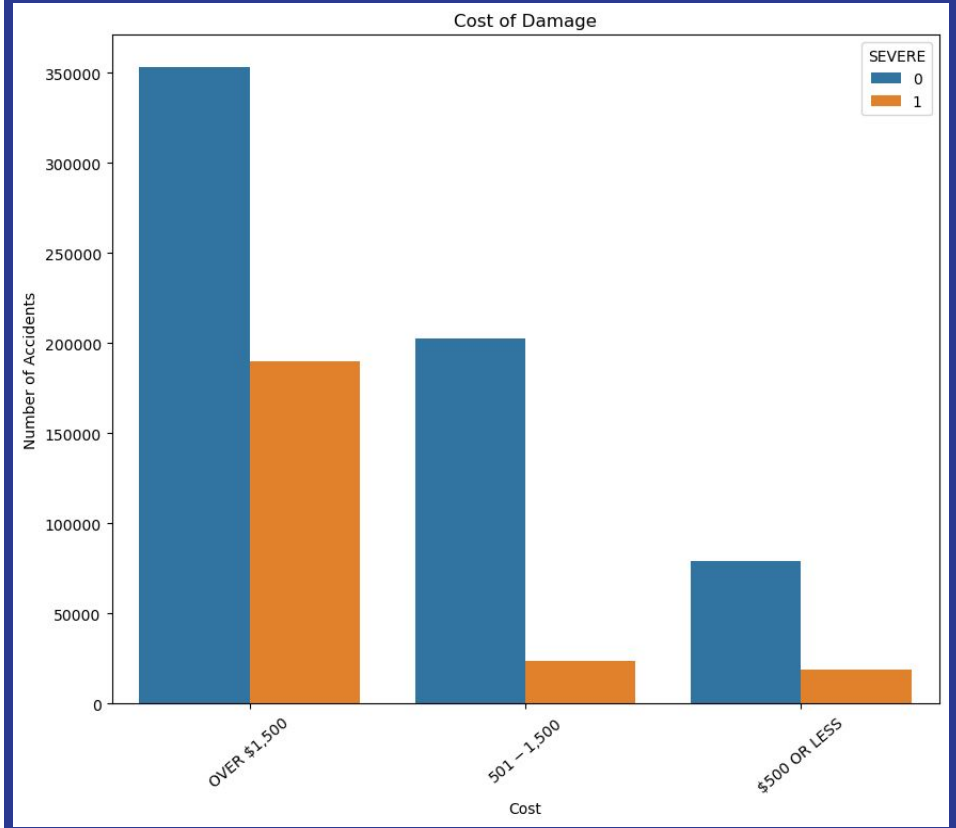
Accidents per Hour

- The most accidents occurred in morning and evening rush hours



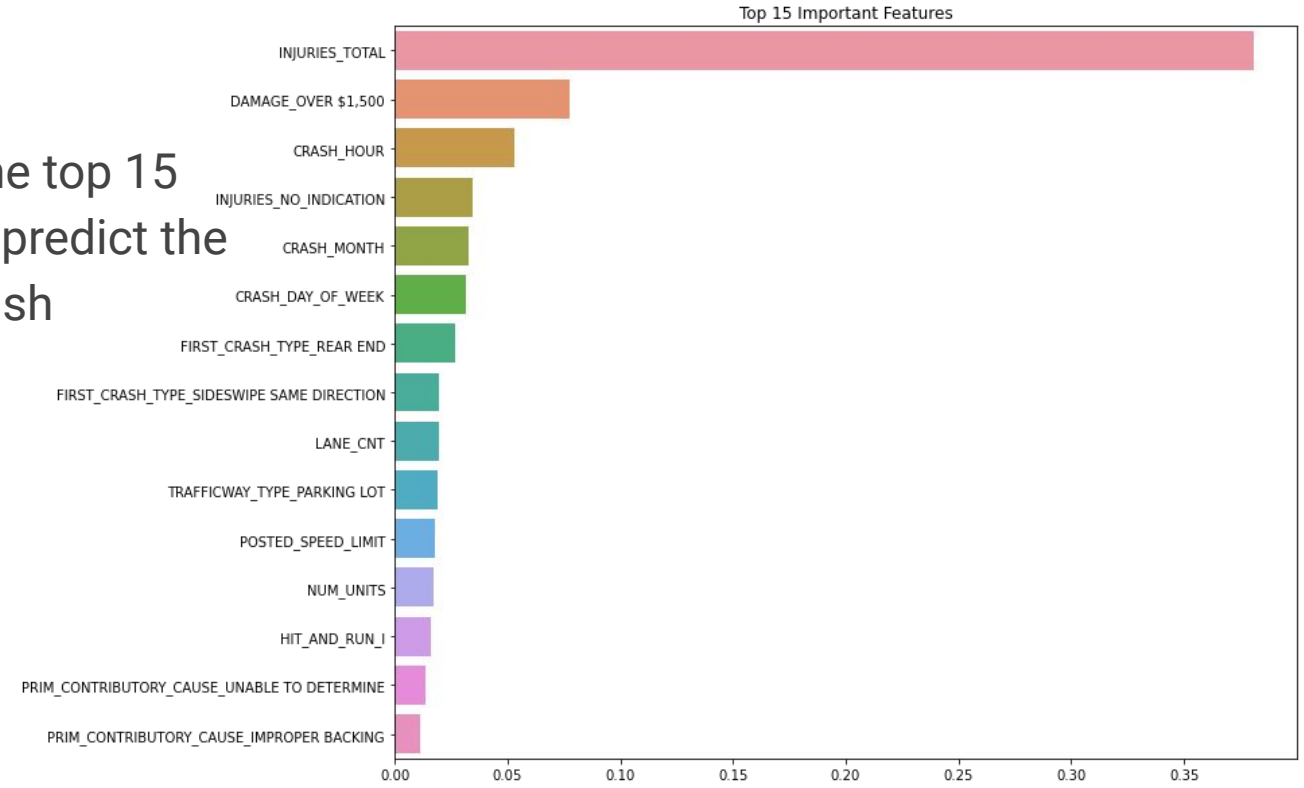
Cost of Damage

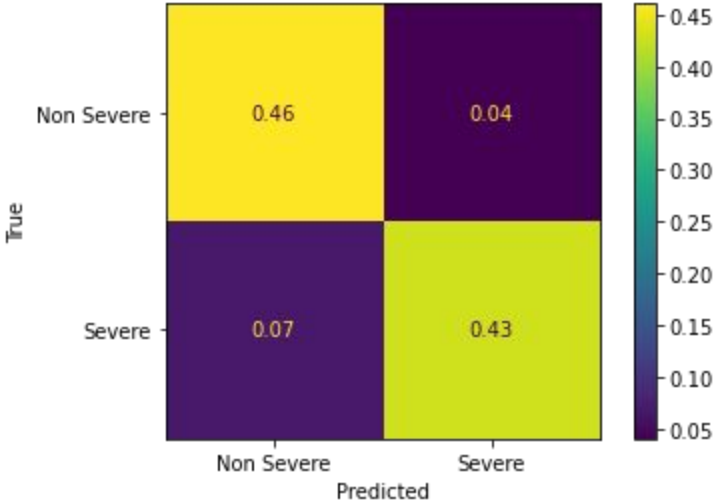
- Most severe and non severe accidents damage cost is more than $1500



Important Features

- This chart shows the top 15 features which can predict the severity of a car crash





Model	Accuracy
Logistic Regression	0.9
Decision Tree	0.85
Random Forest	0.89

Final Model

- Logistics regression model Accuracy - 90%
- Confusion matrix of the Logistics Regression model

Conclusion

- Final models show that certain columns have more of an effect on the severity of a car accident than others.
- Accidents involving pedestrians are more likely to result in severe injury.
- Accidents where there is just a side swipe leads to non severe.

Future Work

- Focus on crash types , which leads to severe injuiresand damage.
- Binning data to find the location of crashes , through which can suggest to reduce a speed limit or adding a Traffic Signal and soon at that location.
- Collect and combine the Drivers dataset, and check on the condition of Drivers .

Thank You

Linkedin

Website

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