Predicting the Car Crash Severity

Predicting car crash severity is important to driver

- This project will build a predicting system to identify the factors which are effecting the traffic crash severity.

- If there are AI deploy in the car in future, the car can give advance to driver, such that to avoid accident happens.

Data acquisition and cleaning

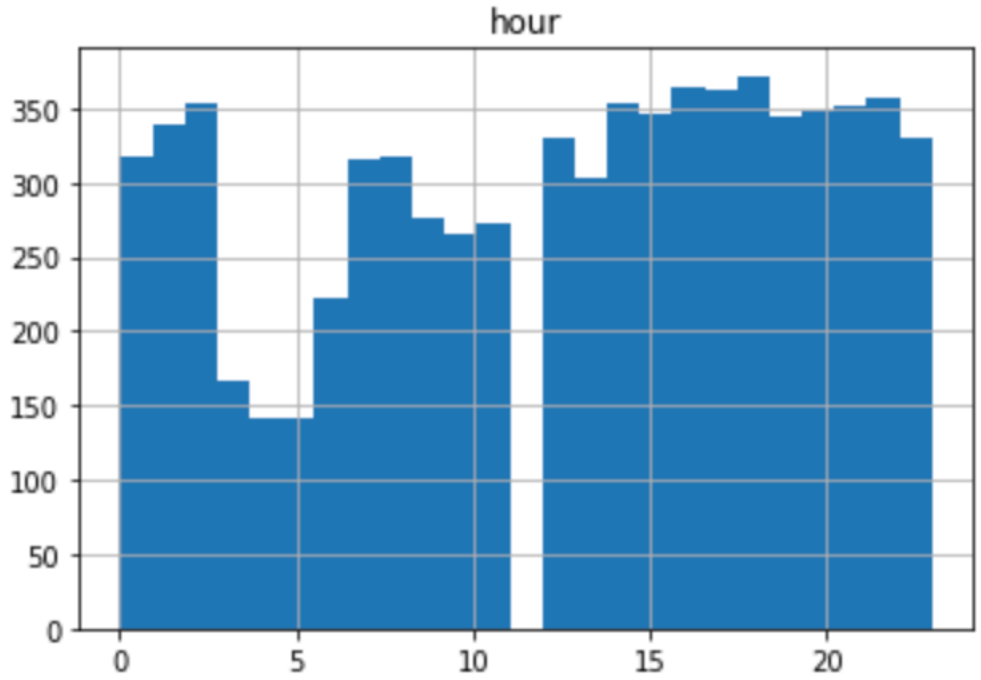
- Dataset from 01/01/2004 to 24/04/2020, provided by the course material.

- Useful attributes are

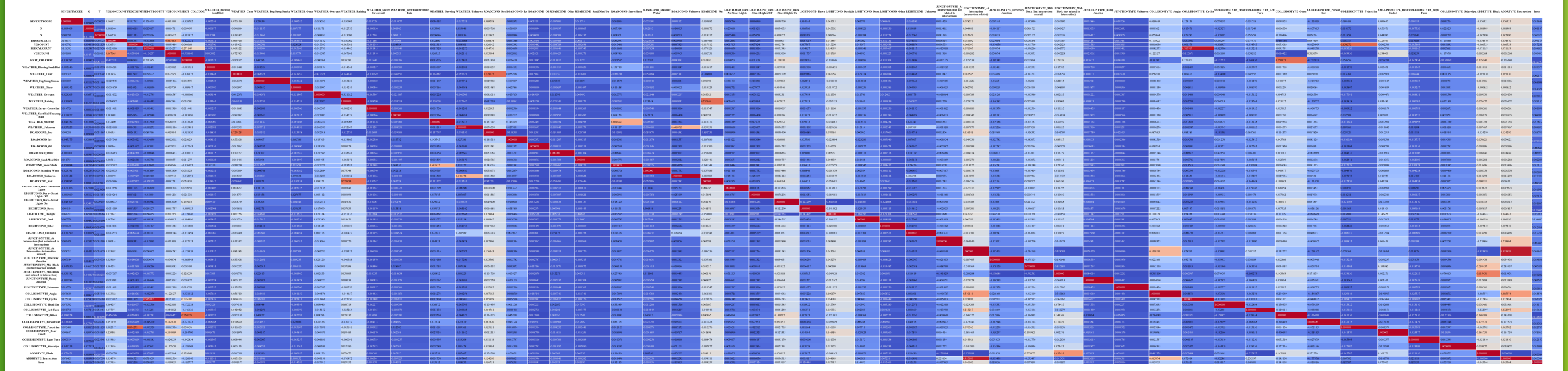
'SEVERITYCODE','X','Y','ADDRTYPE','COLLISIONTYPE','PERSONCOUNT','PEDCOUNT','PEDCYLCOUNT','VEHCOUNT','INCDATE','INCDTTM','JUNCTIONTYPE','SDOT_COLCODE','UNDERINFL','WEATHER','ROADCOND','LIGHTCOND','SPEEDING','ST_COLCODE','HITPARKEDCAR'

- Number of records after filtering are 7297.

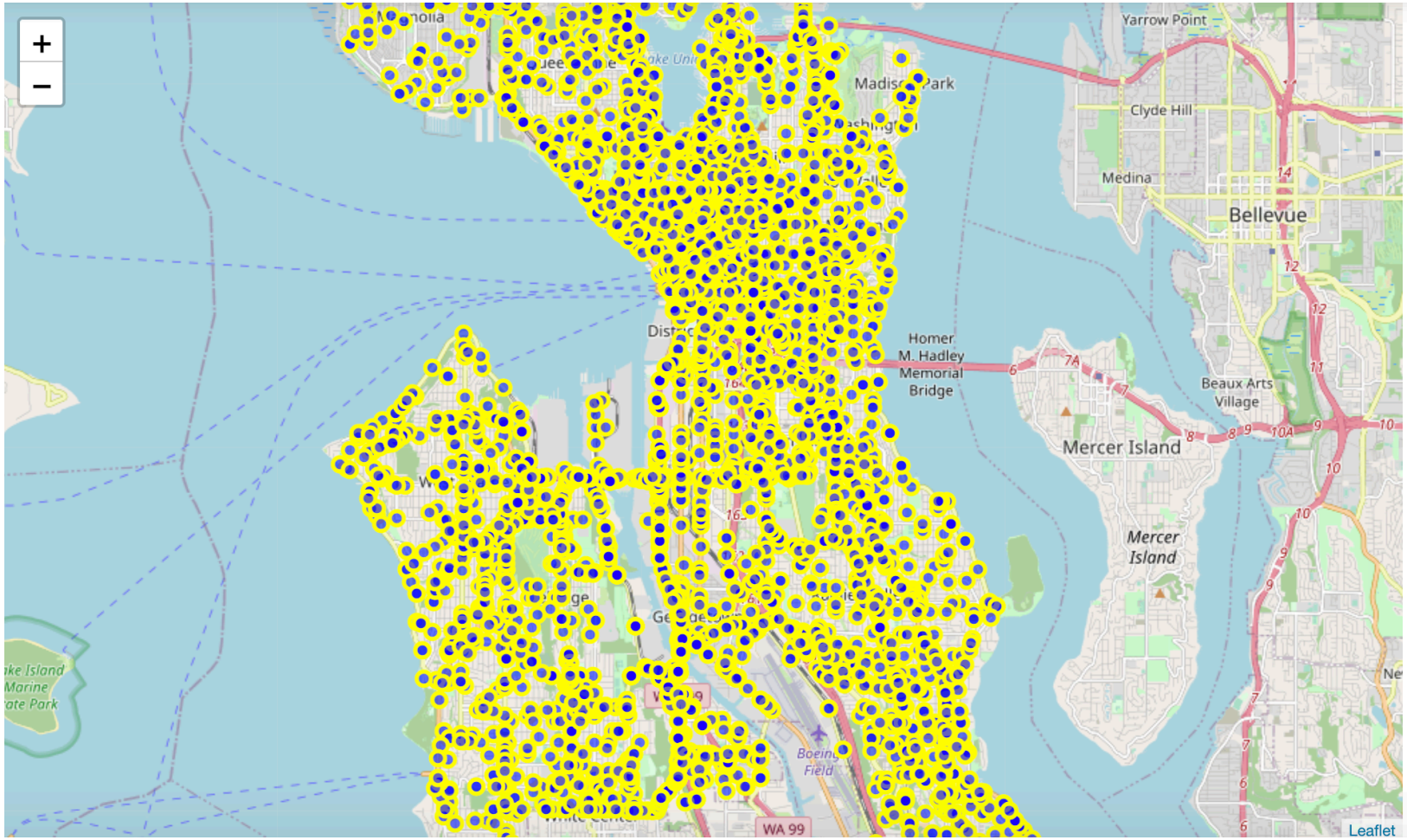
Exploring Data Analysis



Without incident in the period of 11:00 – 12:00 in the filtered dataset

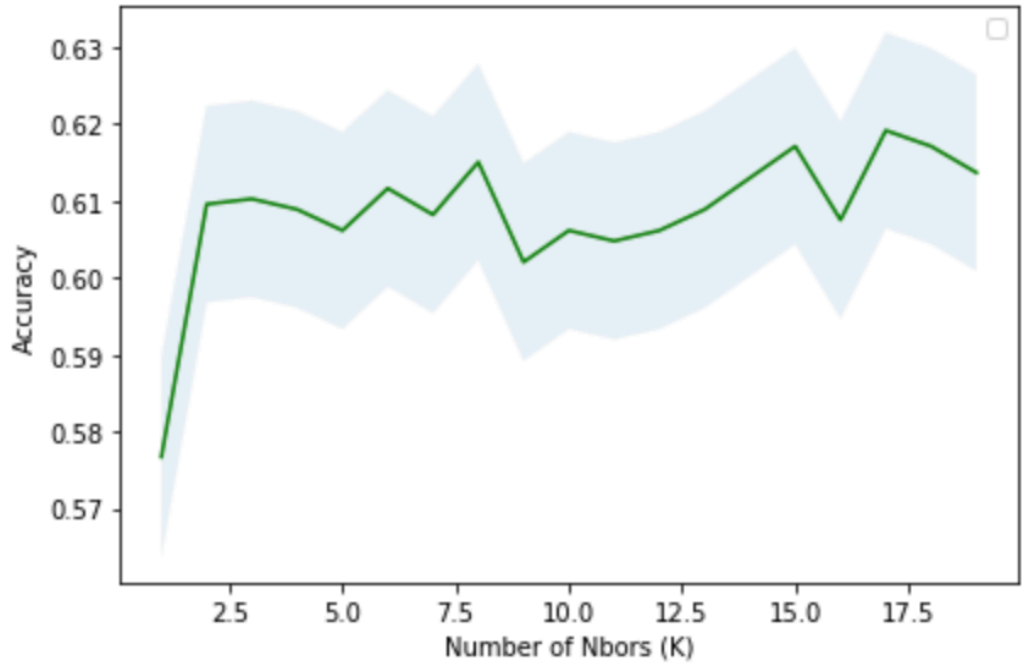


Correlation between the attributes



Incident locations – largely distributed

Predictive Modelling – by KNN



- Maximum of accuracy occur when K is 17

Conclusion

- I was able to achieve ~62% of accuracy on the classification. Although there are many different external attributes, the driver's driving year experience may be a good indicator to affect the car incident. So, if possible, to include the driver experience year is a good choice to improve the prediction accuracy.