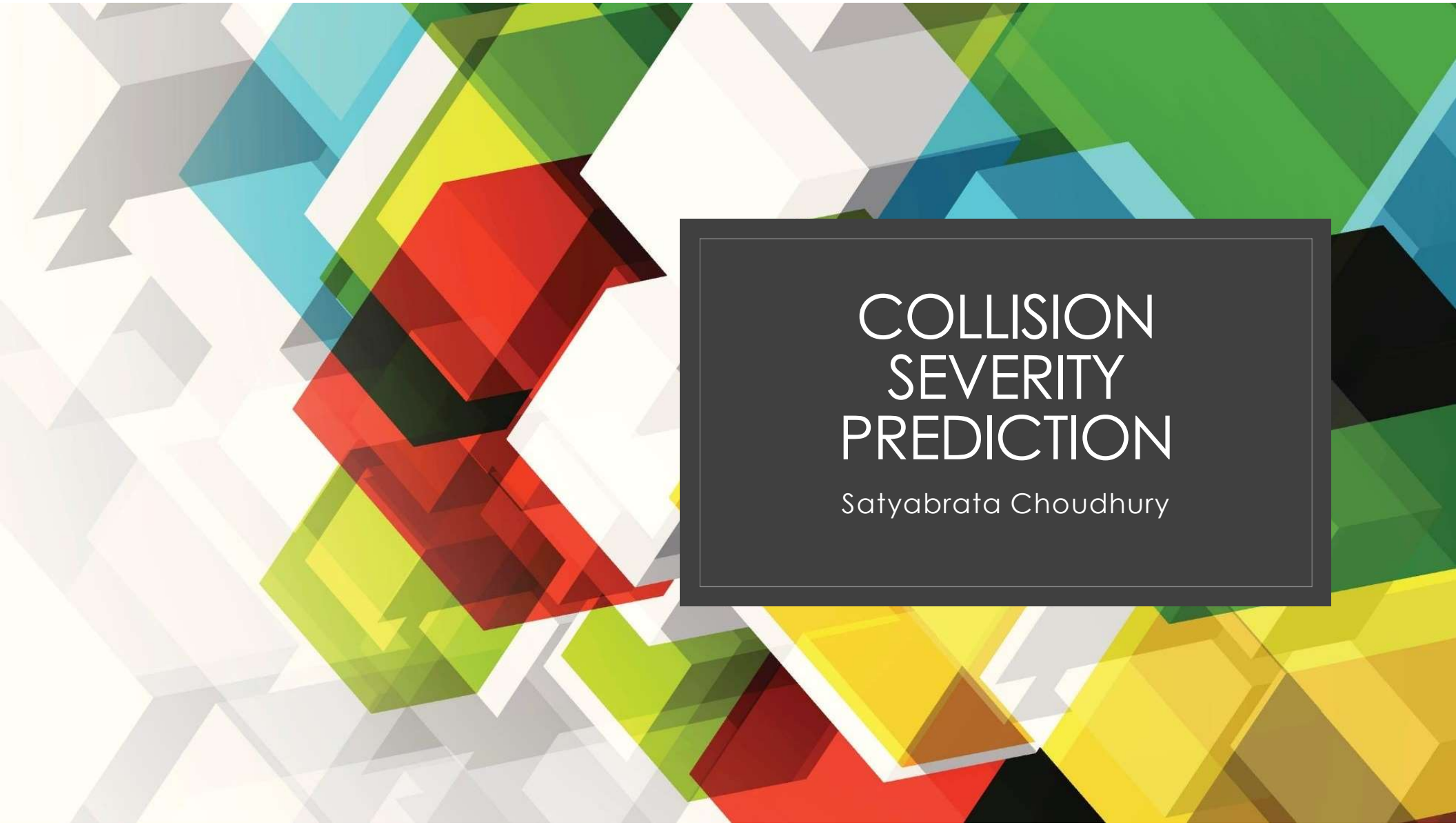

COLLISION
SEVERITY
PREDICTION
Satyabrata Choudhury

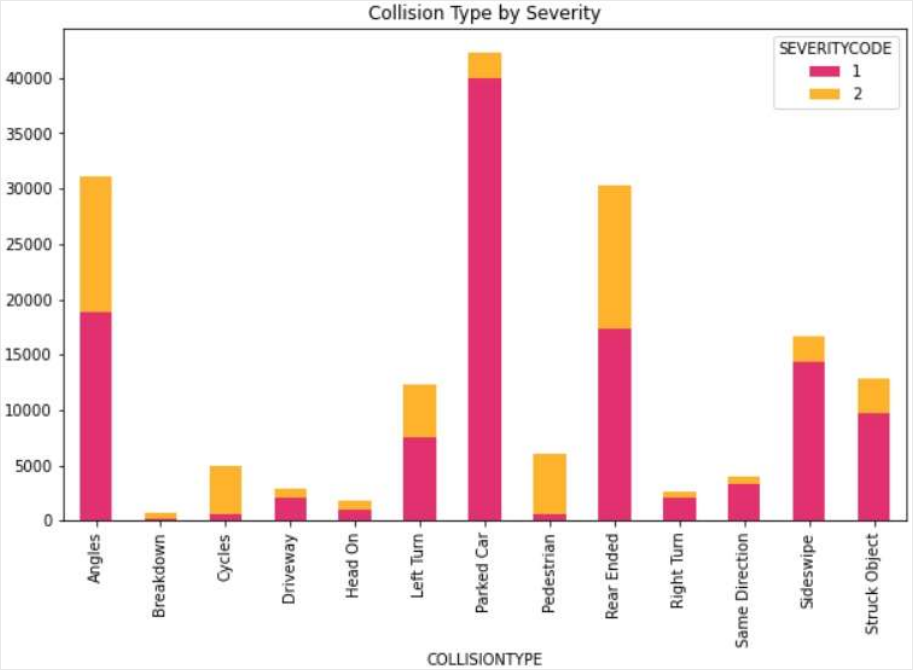
Predicting Severity of Collisions in Seattle, WA

- Road Collisions are 9th leading cause of death worldwide and accounts for 2.2% death globally
- Predicting collision severity helps first responders and city governments to prepared for adverse situations
- Based on the prediction results, step can be taken to prevent loss of life

Data Acquisition and Cleaning

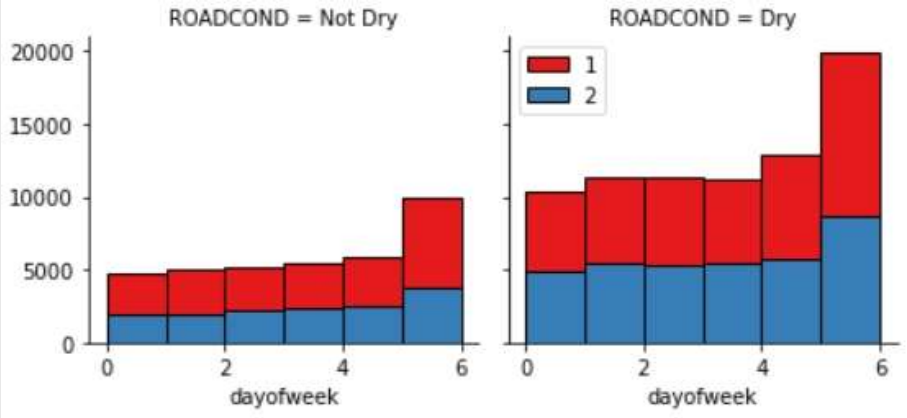
- Data is provided by the Washington State Dept. of Transportation (WSDOT)
- Data has 38 columns and 194673 rows
- Insufficient data was dropped (ex data of year 2020)
- Missing values were derived based on related data
- Columns holding the keys were dropped

Pedestrians and Cyclists are at higher risk



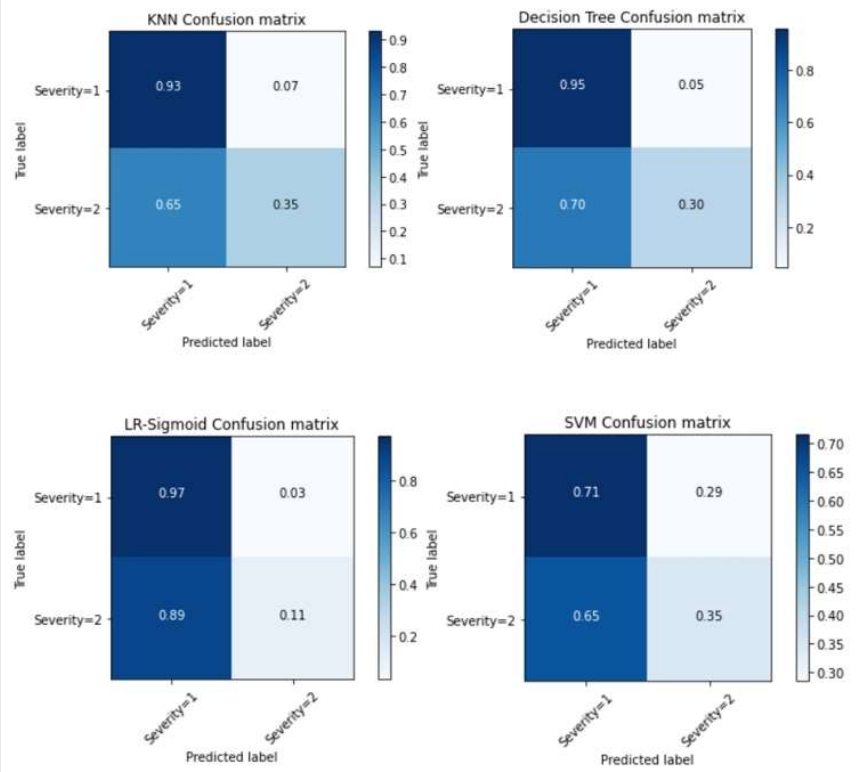
- If cyclist or pedestrians are involved the collision will be more severe
- Hitting parked car is major cause of the collision
- Rear ending may also result in high severity

More Collisions on Weekend



- Contrary to belief accidents tends to happen during daylight than in dark
- More accidents on weekend than a weekday

Model Evaluation



- 4 classification models were evaluated
  - K Nearest Neighbor
  - Logistic Regression
  - SVM
  - Decision Tree
- Based on the evolution K-NN model outsmarts the other model with accuracy of 74% & lower Type 2 errors

Conclusion

MODELS GENERATED HIGHER ACCURACIES IN THE RANGE OF 60% TO 75%

THE MODEL CAN BE IMPROVED BY PROVIDING ACCURATE DATA AND MORE FEATURES