

TRAFFIC COLLISION ANALYSIS

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TABLE OF CONTENTS



01

Motivation
n



02

Data
Insights



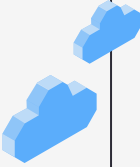
03

Future
Work



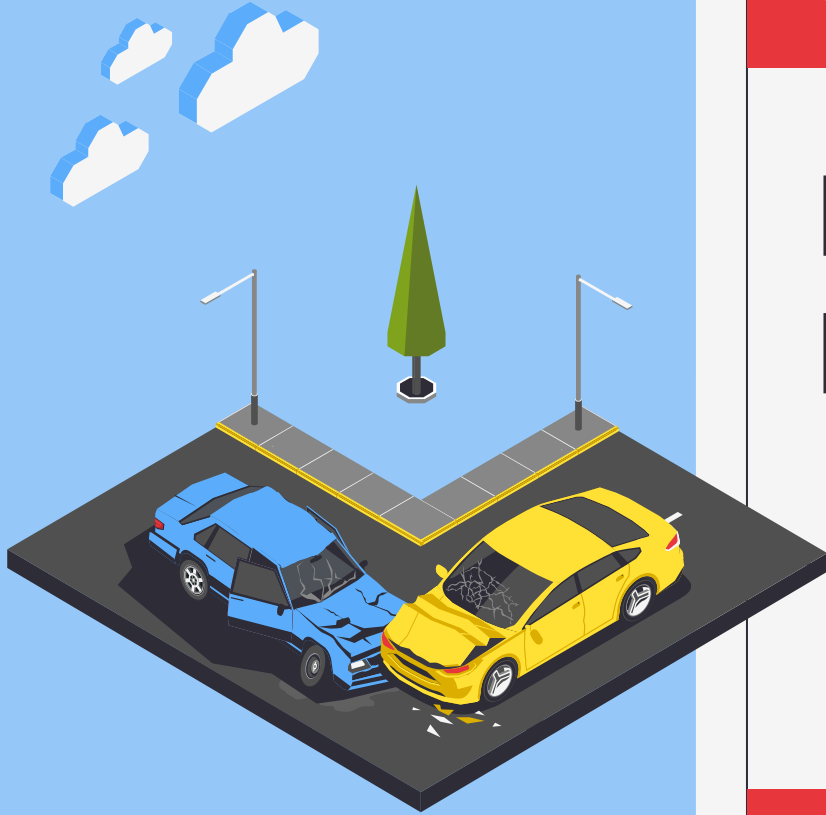
04

Conclusio
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01

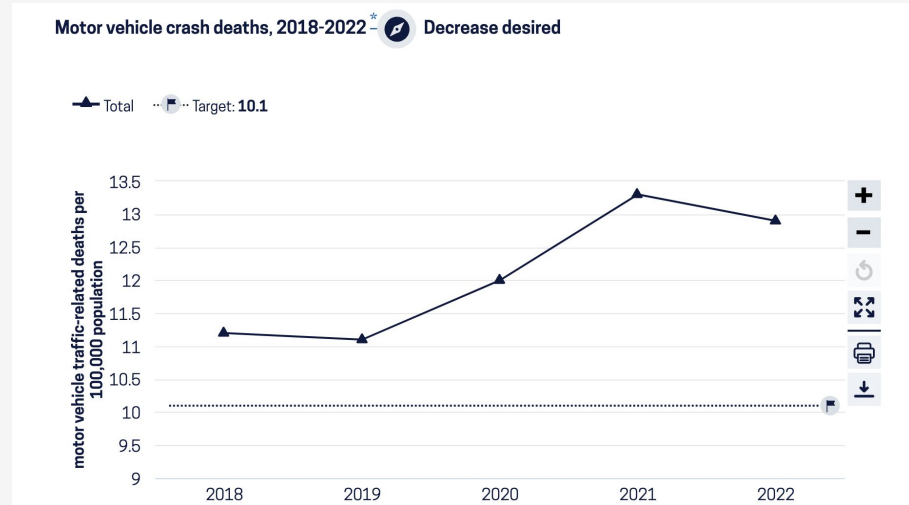
MOTIVATIO N



RISE IN VEHICULAR ACCIDENTS

- Road crashes are one of the leading causes of death in the U.S.
 - Perception
 - Precaution
 - Prevention
- We analyze the US Accidents (2016 - 2023) dataset from Kaggle
 - <https://www.kaggle.com/datasets/sobhanmoosavi/us-accidents/data>¹

Population Size: U.S. Residents



<https://odphp.health.gov/healthypeople/objectives-and-data/browse-objectives/injury-prevention/reduce-deaths-motor-vehicle-crashes-ivp-06/data?group=None&from=2018&to=2022&state=United%20States&populations=#edit-submit>

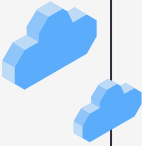
[1] Sobhan Moosavi. (2023). US Accidents (2016 - 2023) [Data set]. Kaggle. <https://doi.org/10.34740/KAGGLE/DS/199387>

7,728,394

Number of accidents between 2016 and 2023
That's over 22 accidents for every 1,000 people



LET'S START WITH PERCEPTION



PERCEPTION 1

Accidents are evenly distributed across the country



PERCEPTION 2

Most accidents occur at night due to poor visibility



PERCEPTION 3

Poor weather conditions lead to more number of accidents





02

Data Insights



“Standing in the middle of the road is very dangerous; you get knocked down by the traffic from both sides.”

**- MARGARET
THATCHER**



GEO-SPATIAL ANALYSIS



**LOS
ANGELES**
105,878

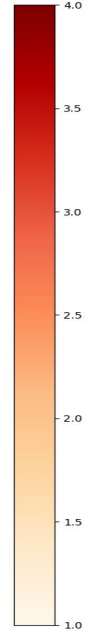


**HOUSTO
N**

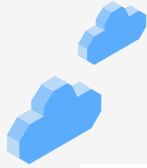
95,980



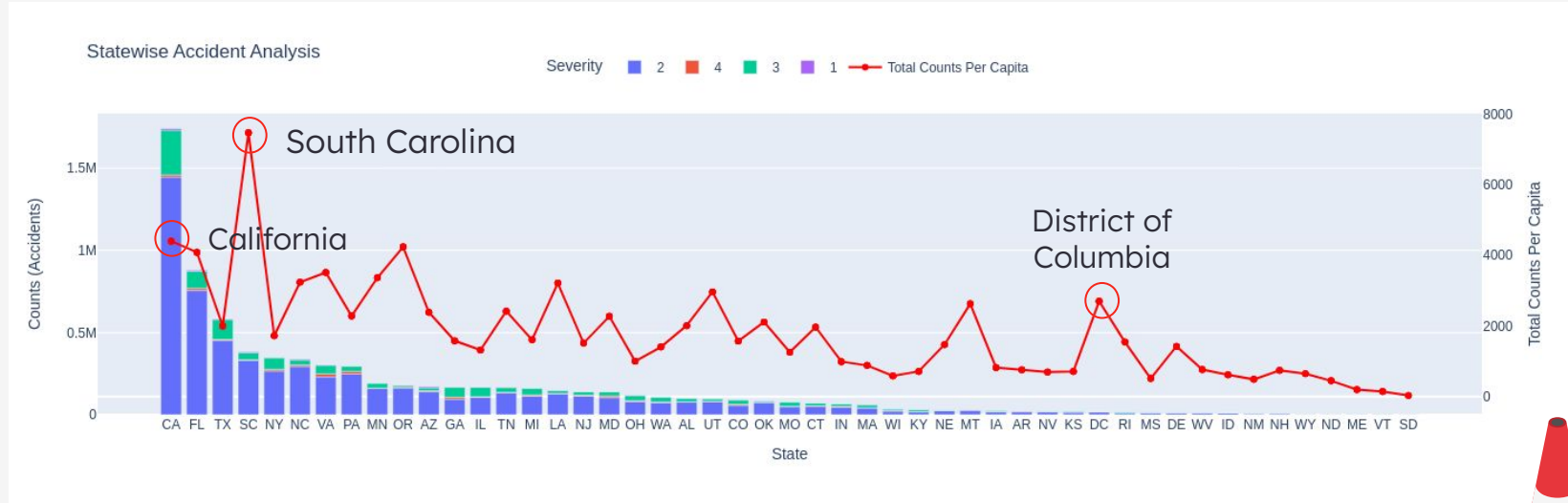
MIAMI
162,167



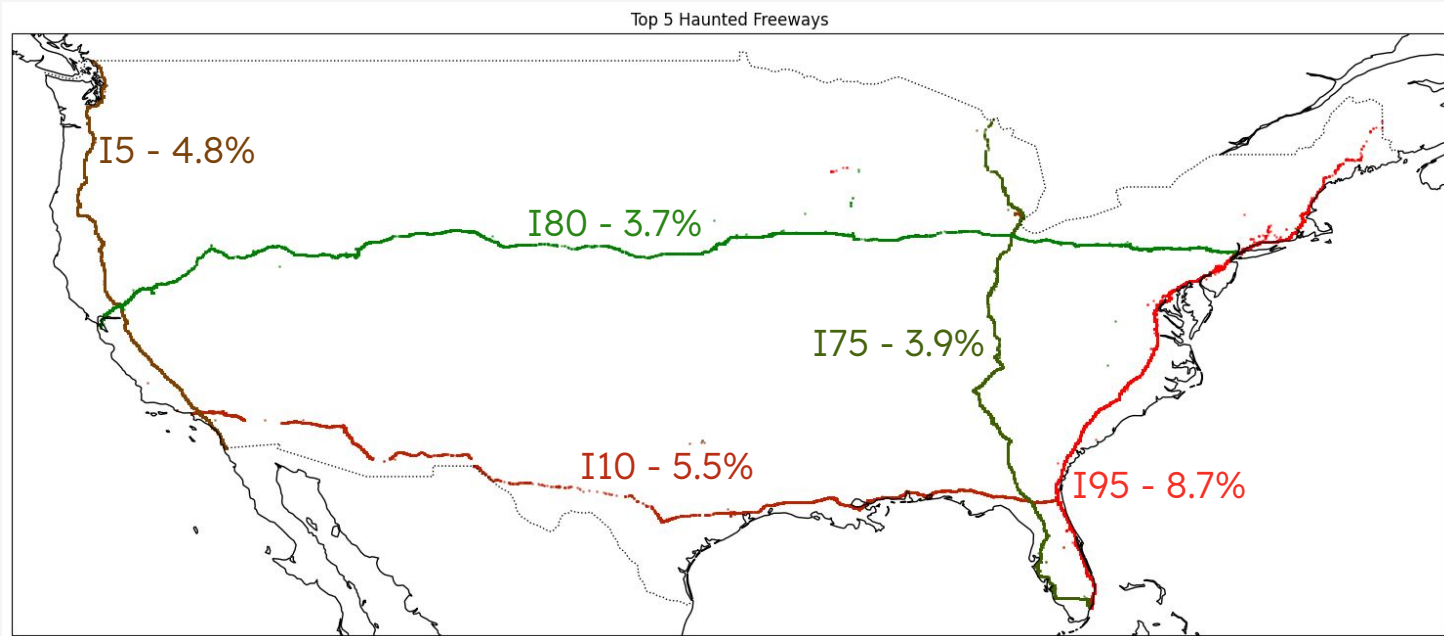
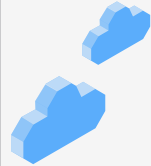
HEAT-MAP OF SEVERITY OF ACCIDENTS



○ — ○ Trendline Normalized against Population



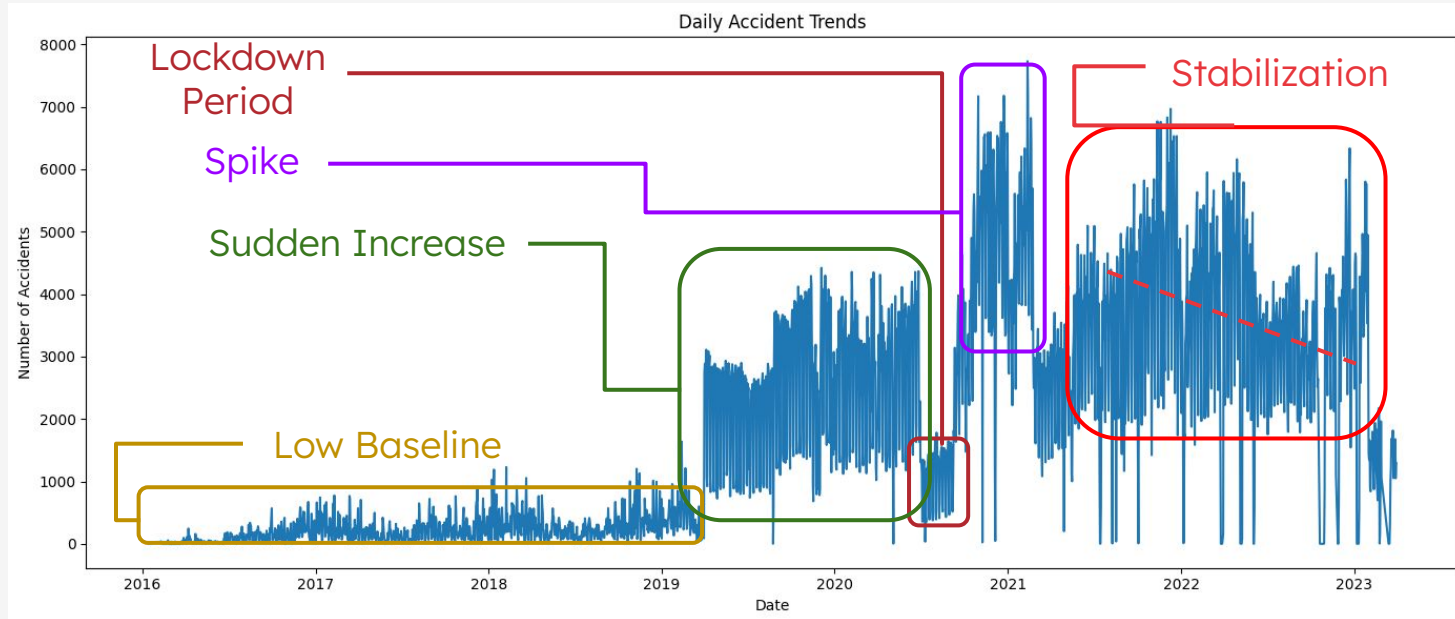
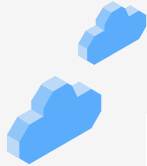
STATE-WISE HISTOGRAM OF ACCIDENTS



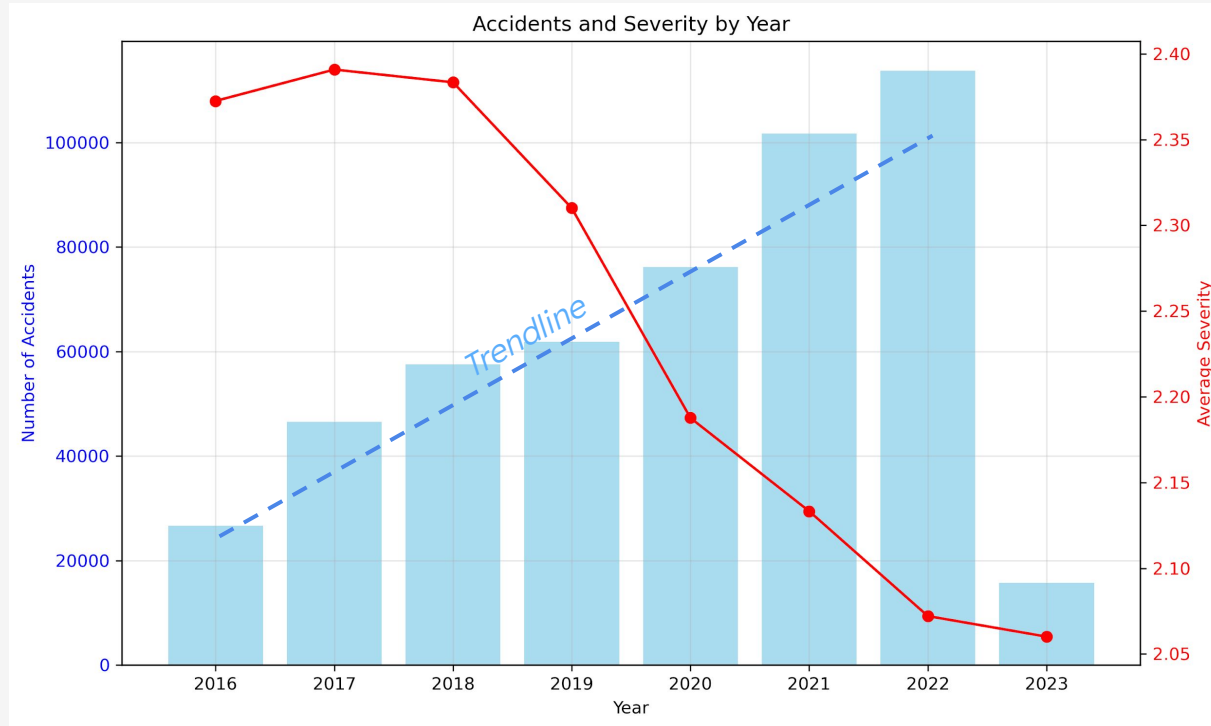
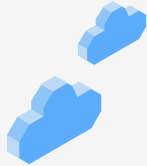
HIGHWAYS TO HELL



TEMPORAL ANALYSIS

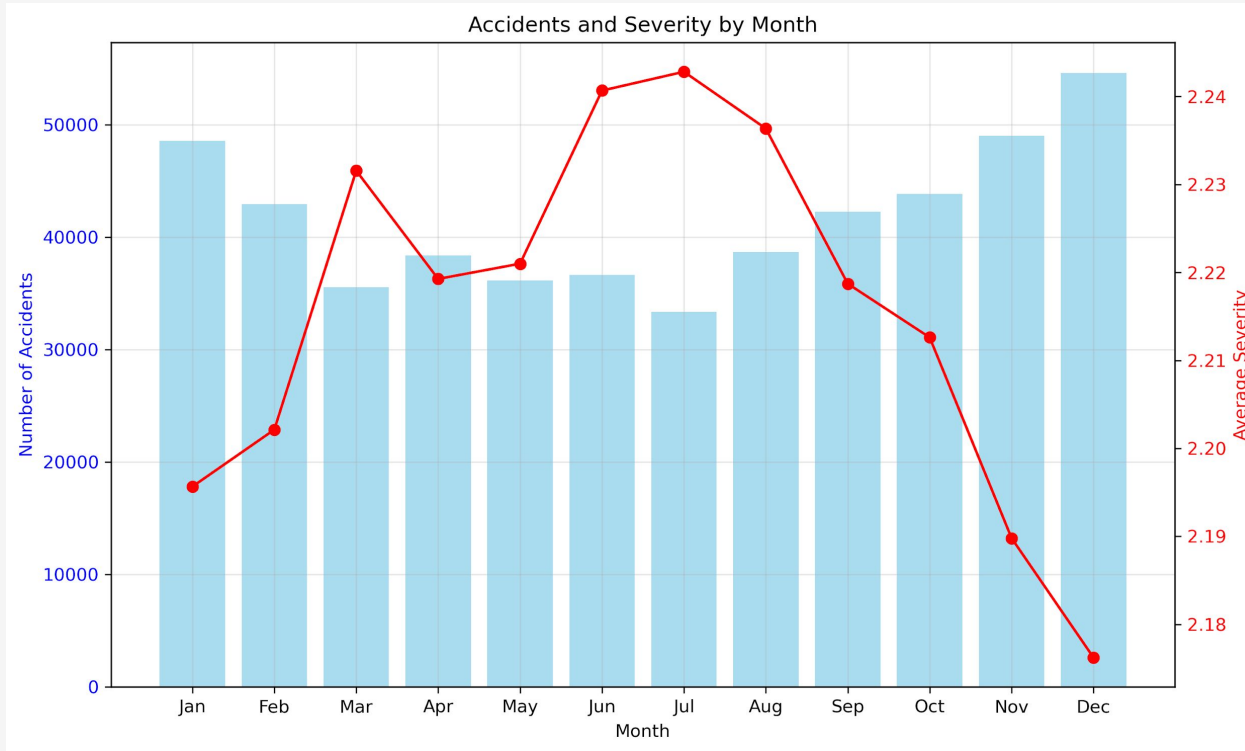
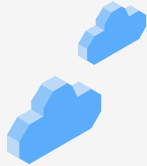


DAILY OCCURRENCES OF ACCIDENTS

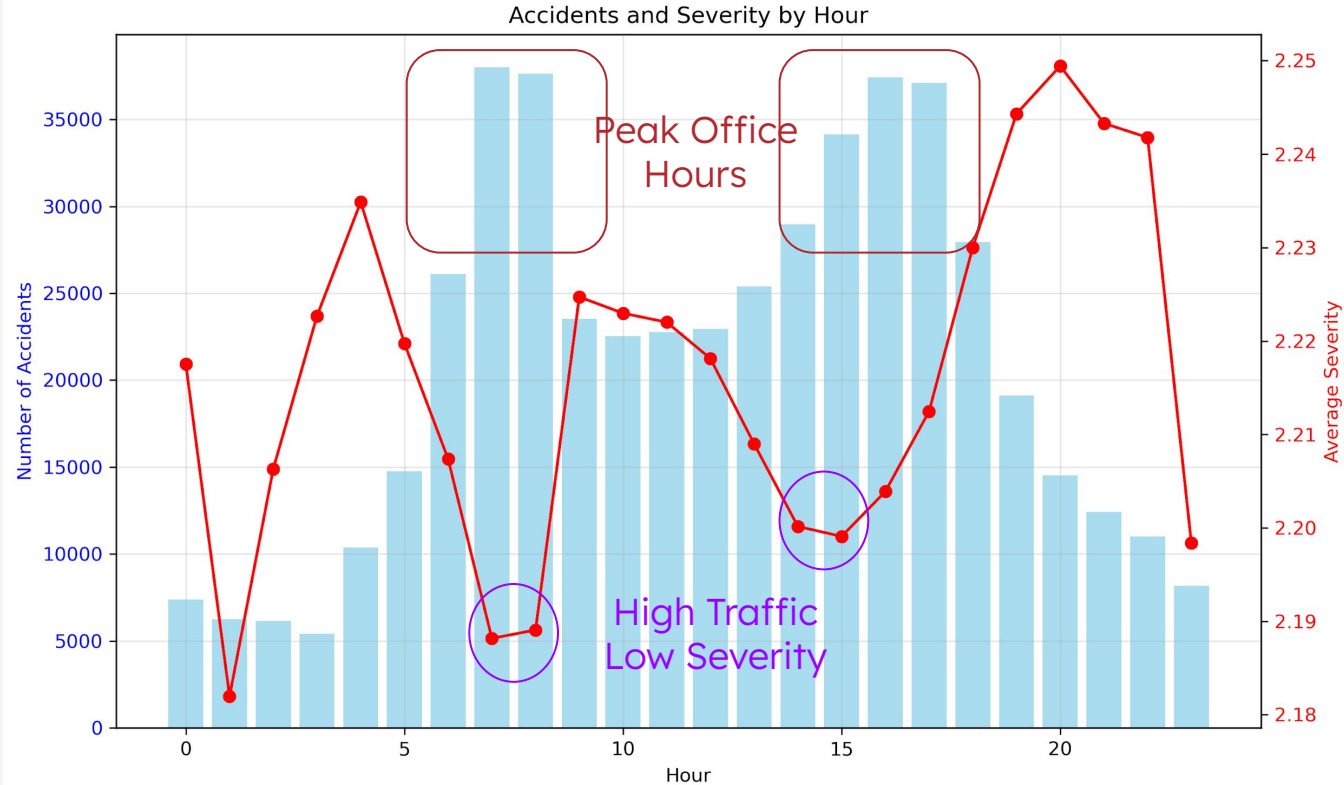
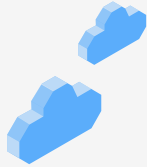


NUMBER OF ACCIDENTS [YEAR]





NUMBER OF ACCIDENTS [MONTH]

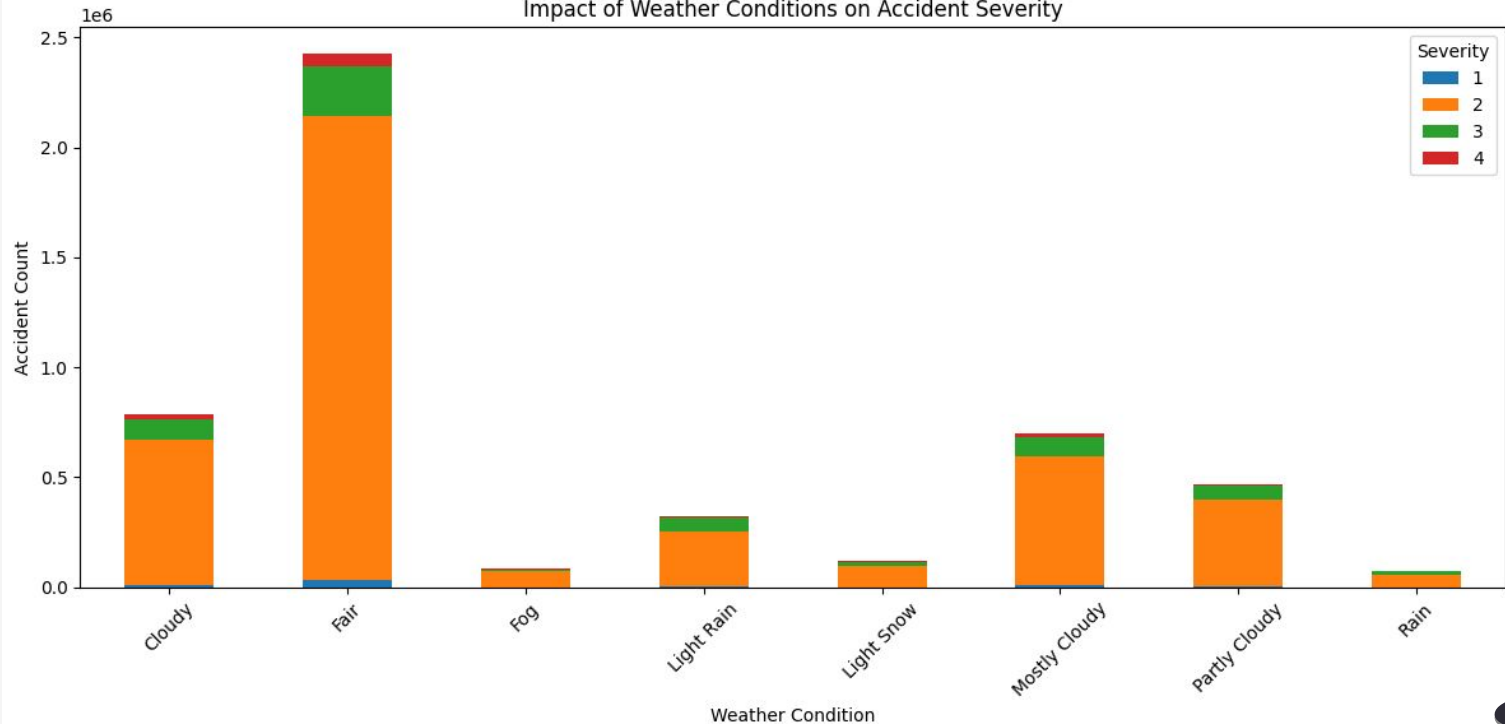


NUMBER OF ACCIDENTS [INTRA-DAY]



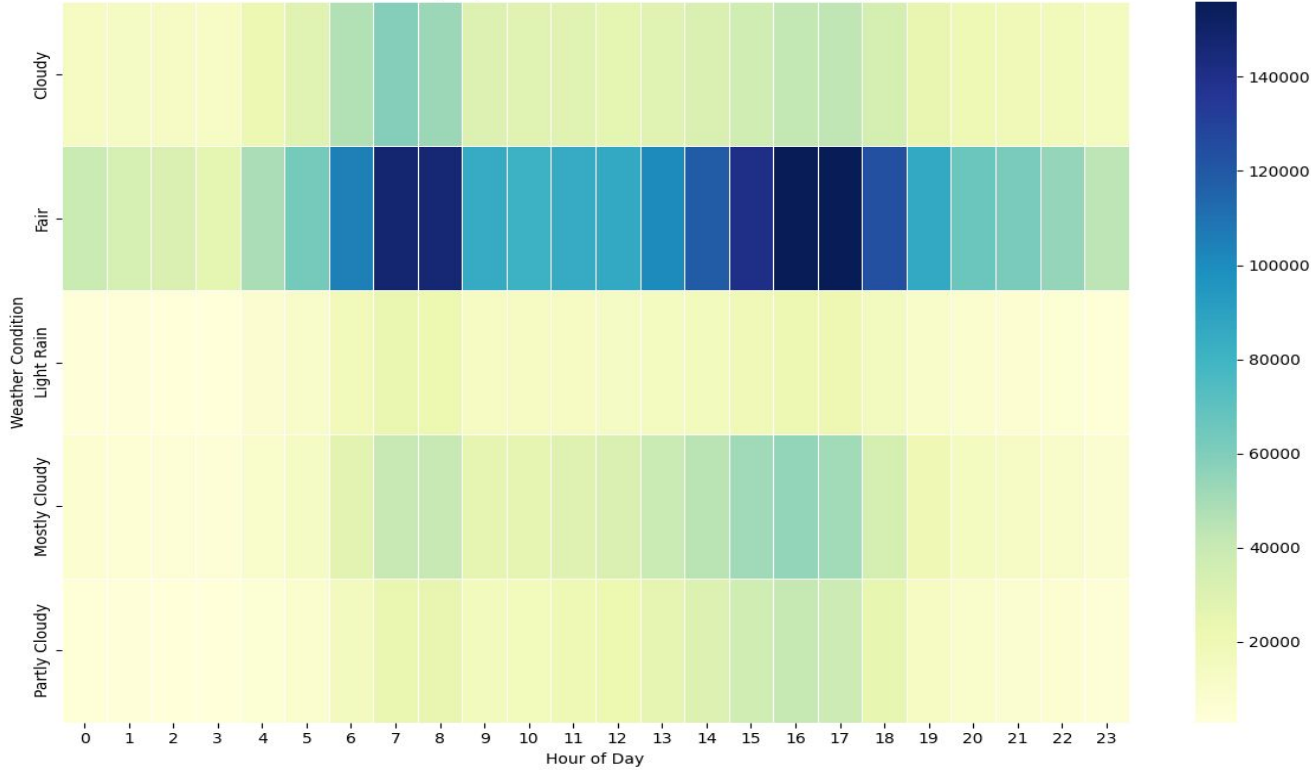
WEATHER ANALYSIS

Impact of Weather Conditions on Accident Severity

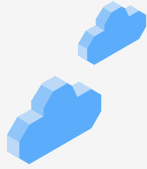


WEATHER VS SEVERITY

Accidents by Top 5 Weather Conditions and Time of Day

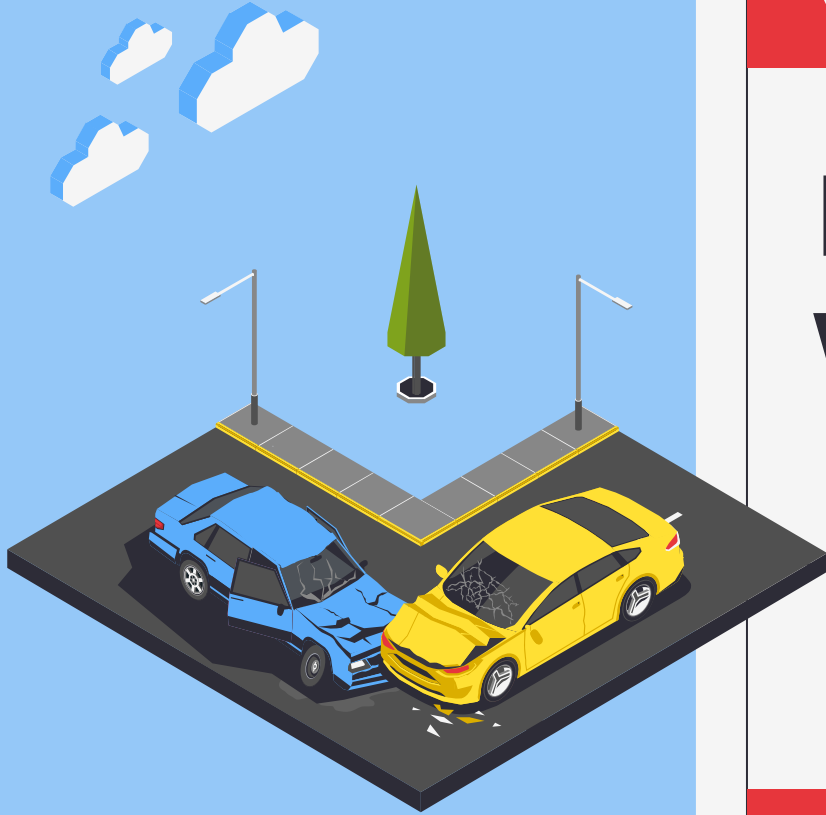


WEATHER & TIME OF DAY

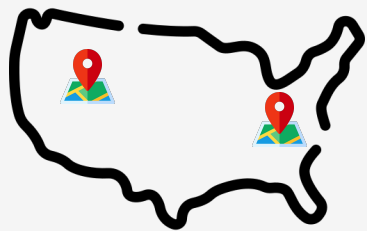


03

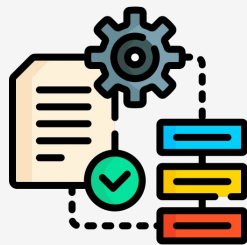
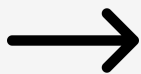
FUTURE WORK



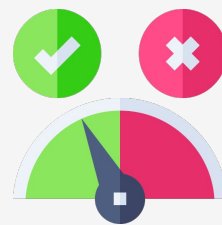
RECOMMENDER FOR PRECAUTION



Inputs



Predictive Model

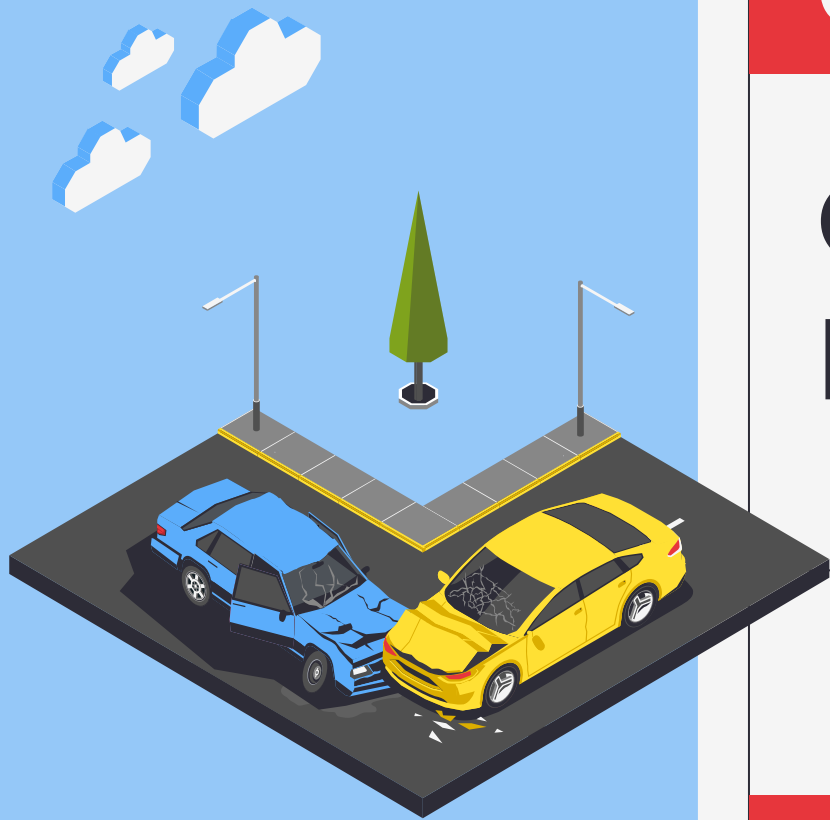


Safety Score

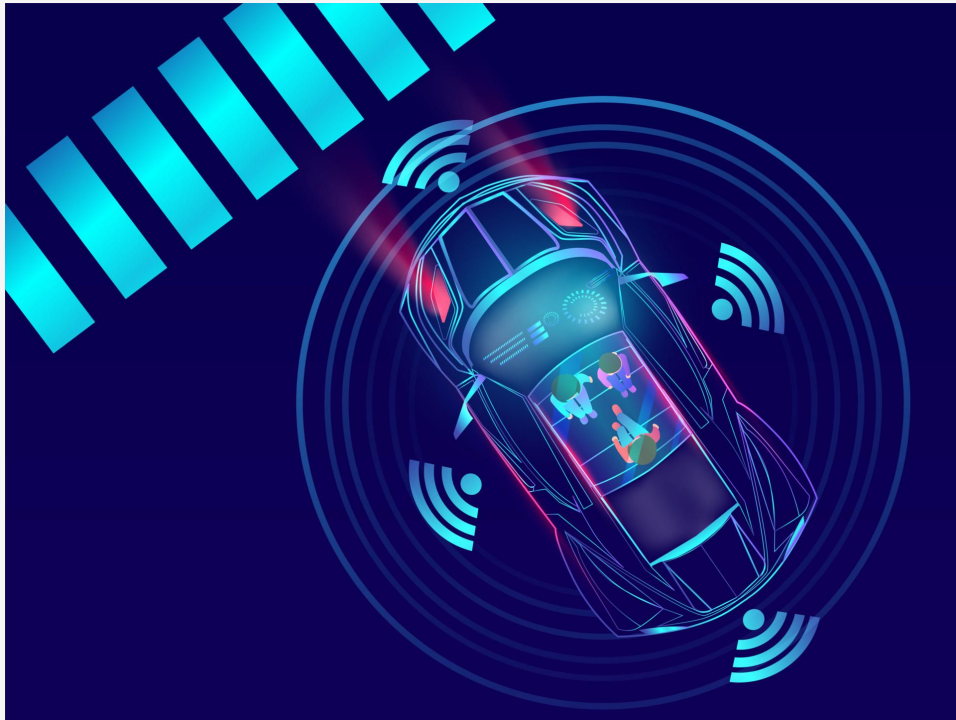


04

CONCLUSION



FINALLY, PREVENTION?



Automotive Sensing &
Autonomous Vehicular Movement

