



Driving a safer future

because change starts with us!

By AnalytIQ



Meet the team

Theto Maunatlala- Modelling Whisperer

Raeesa Lorgat- Modelling Master

Sharlene Moetji- Data explorer

Viasha Morgan- Data Interpreter

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Palesa's Story....



EYES ON THE SCREEN, NOT ON THE ROAD. A RECIPE FOR DISASTER. ♦



DISTRACTED DRIVING. INSTANT CATASTROPHE.

Why this matters

South Africa is ranked #1 as the most dangerous country for “DRIVING”

Key safety factors, including traffic death rates, seat-belt usage and speeding, painting a concerning picture of road driver safety.

<https://imotonews.co.za/2025/04/01/south-africa-road-study/>



Objectives

1.

Better Choices

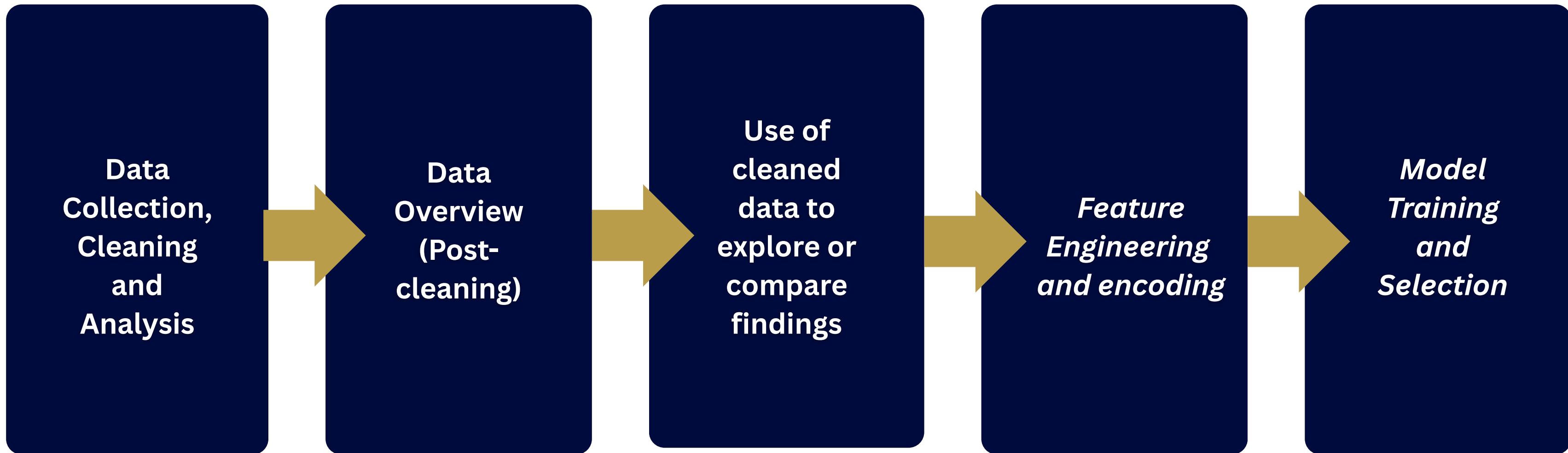
2.

Better Driver

3.

Better South Africa

Methodology



Data Sources

Behavioral Survey Data (Collected)

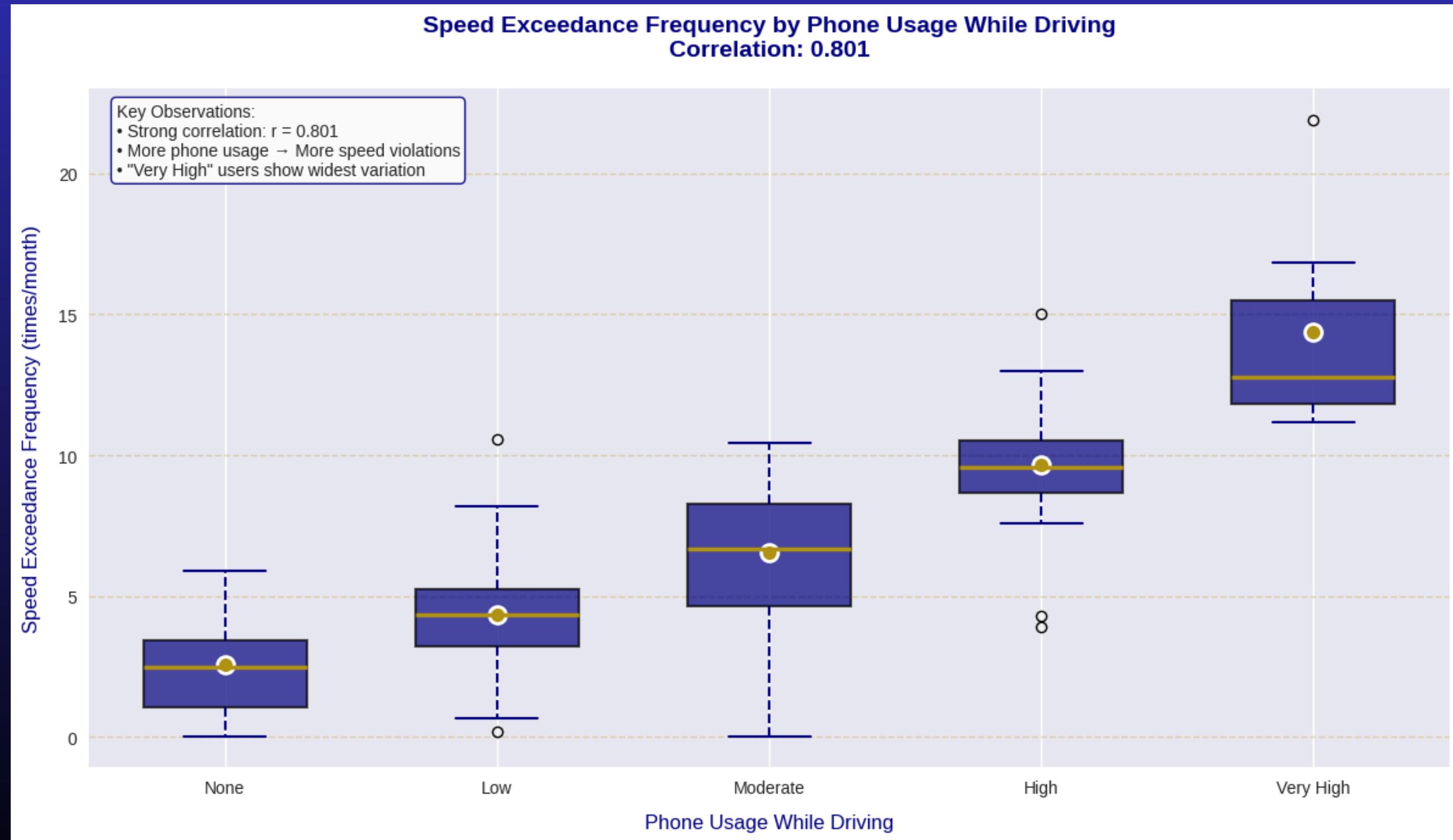
<https://docs.google.com/forms/d/e/1FAIpQLSdNSRxtvL9y9NUEsO6OvSmh-WrwIml579cYOmSeqqgBVBFIsw/viewform?usp=sharing&ouid=117407586652741014564>

Altron vehicle and location object data

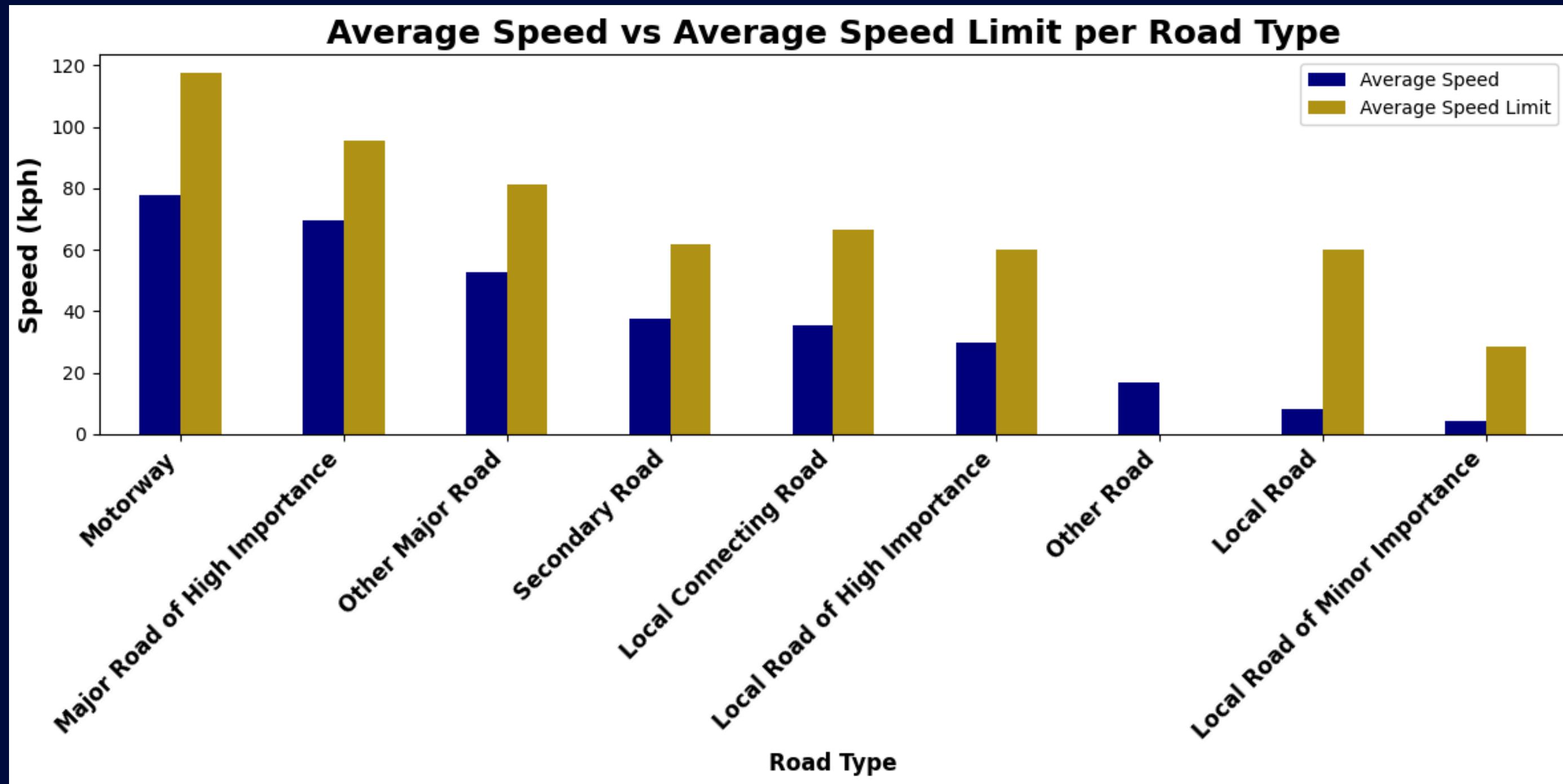
Image Data (Kaggle)

Exploratory Data Analysis

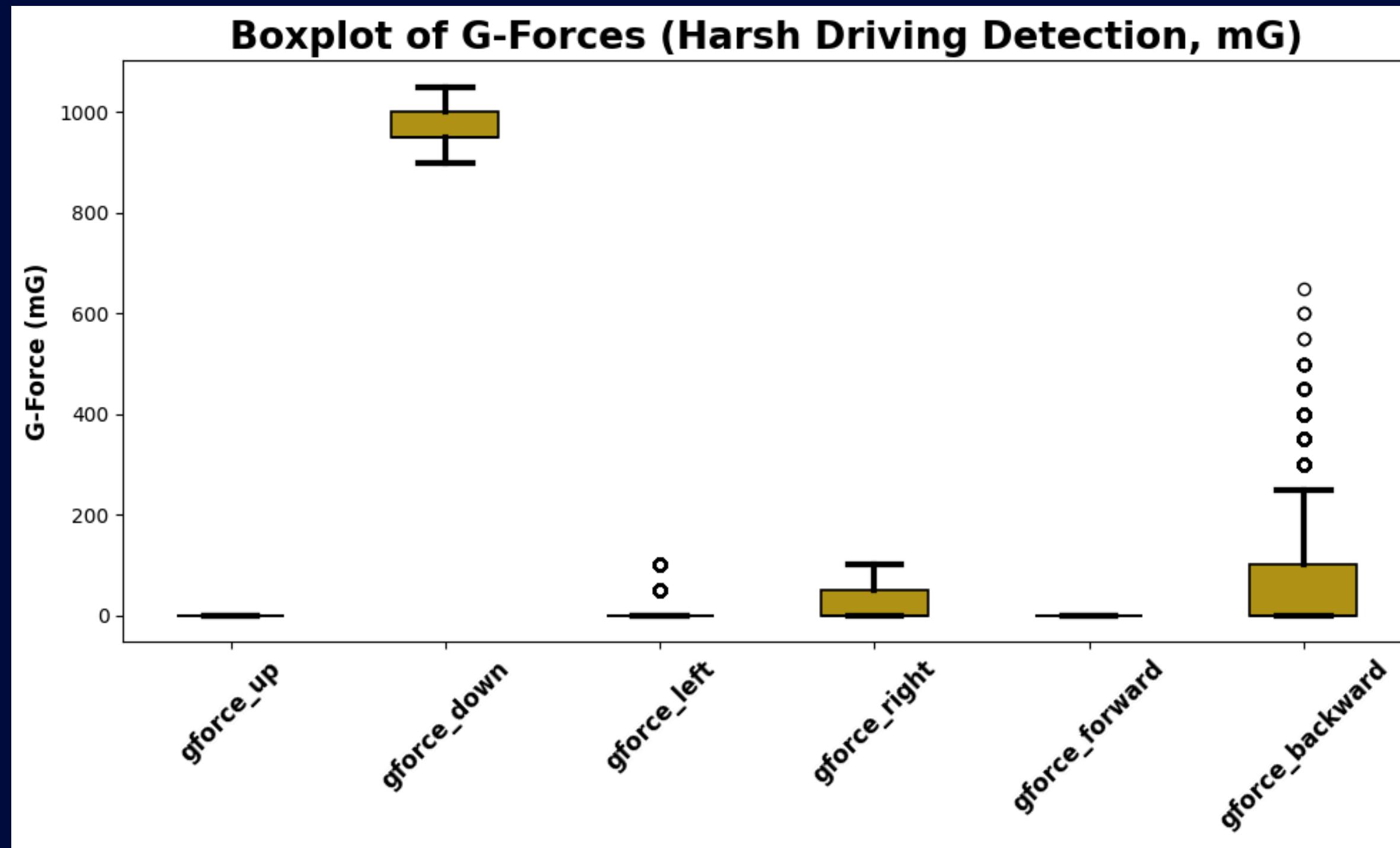
Beyond Distraction: Is High Phone Use the Real Speeding Trigger?



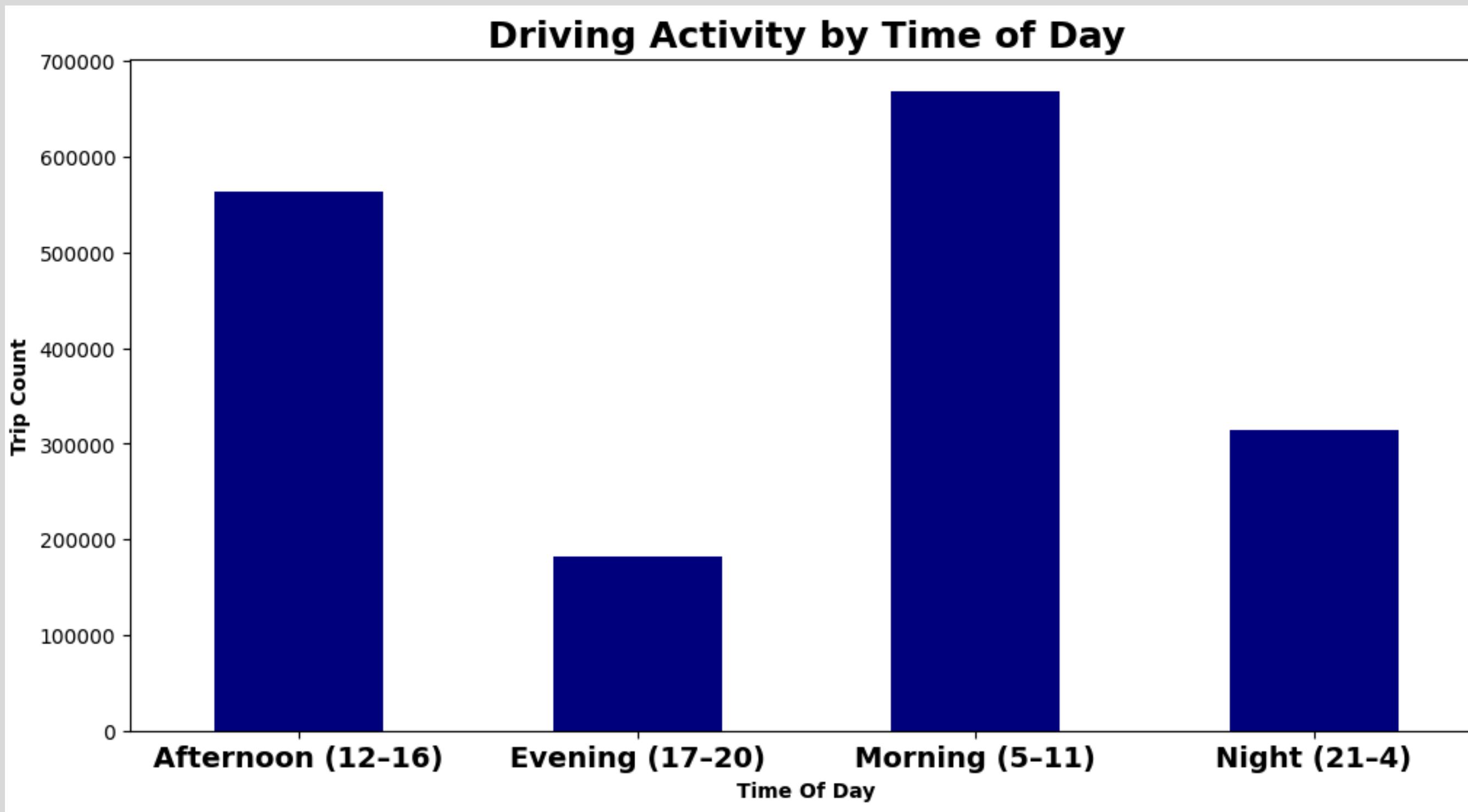
Do drivers consistently maintain a safe and legal speed?



Do drivers avoid harsh acceleration, braking and left or right swerving?

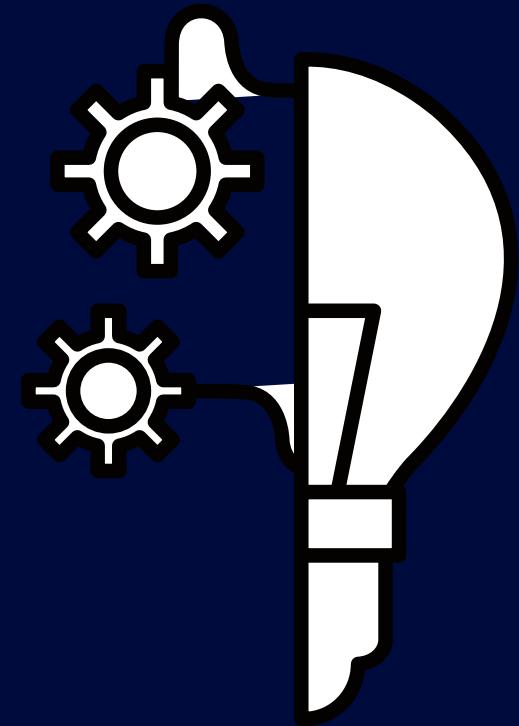


Are drivers conscious of the time of day at which they are driving?



Feature Engineering

Feature Selection and Engineering

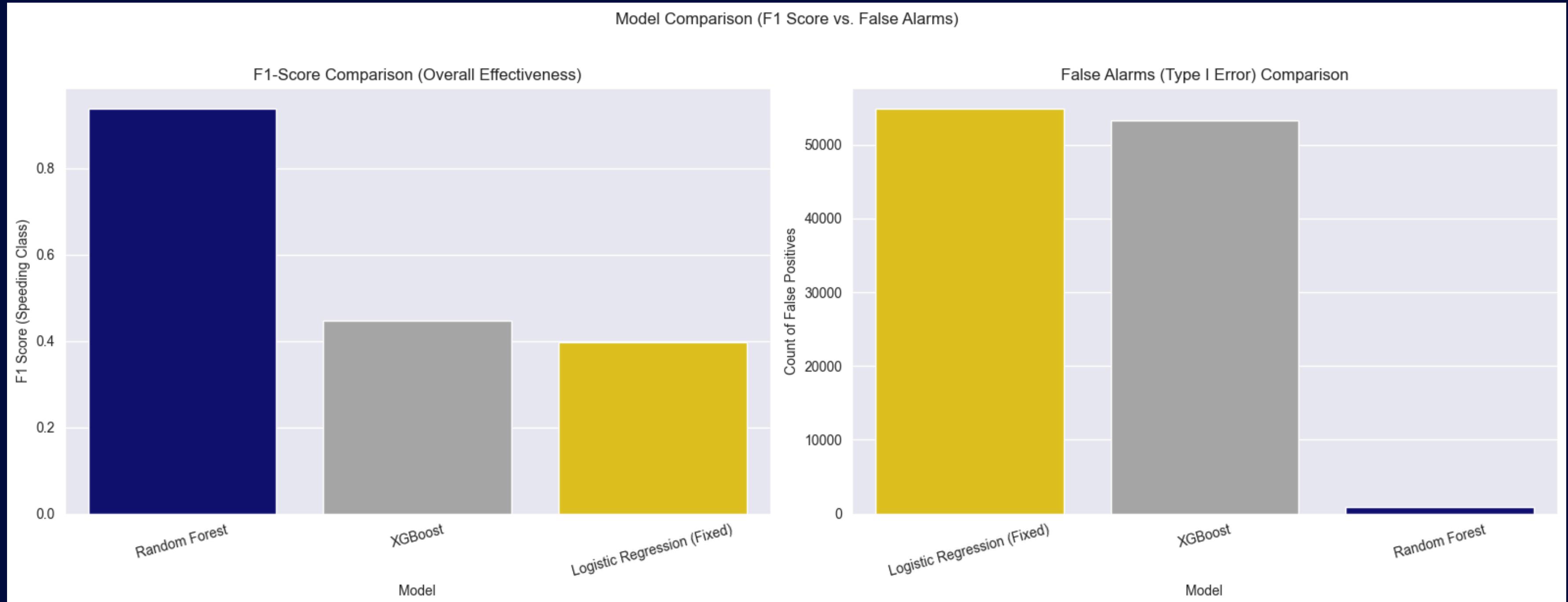


- Target Definition
- Leakage Prevention
- New Contextual Features
- High-Cardinality Handling

Supervised Modelling

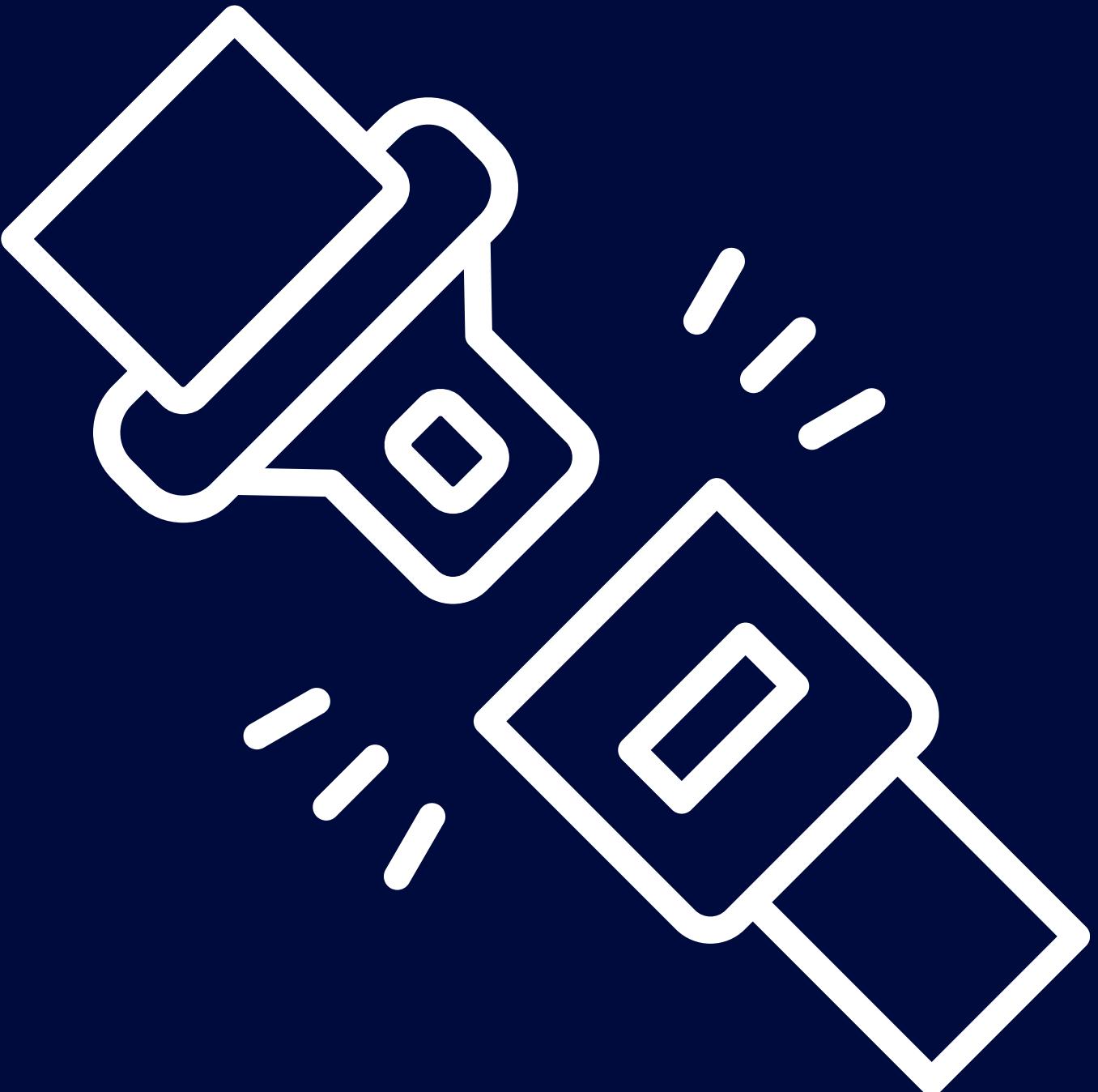


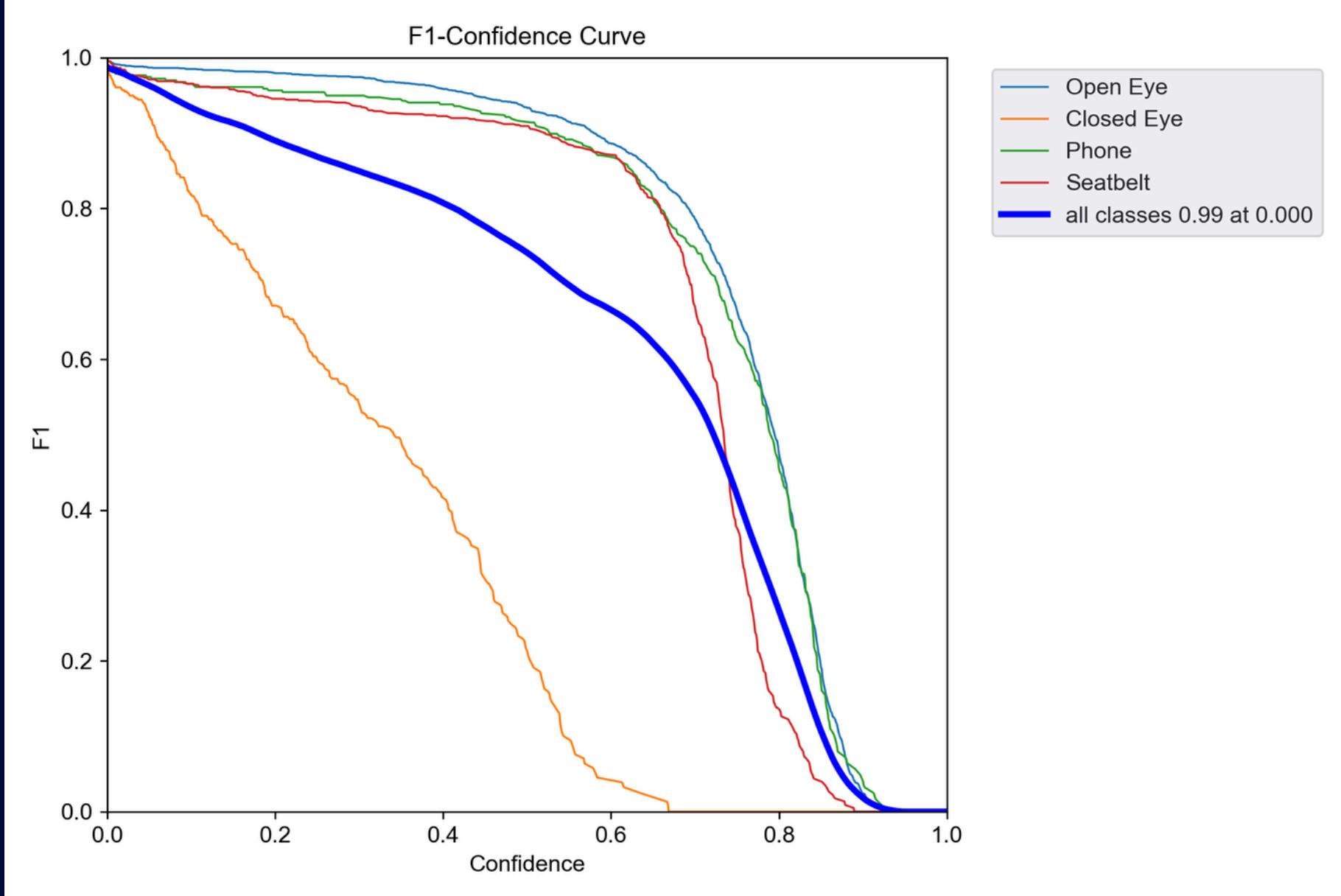
Comparing Algorithms



Random Forest is the best model

Image Recognition Modelling



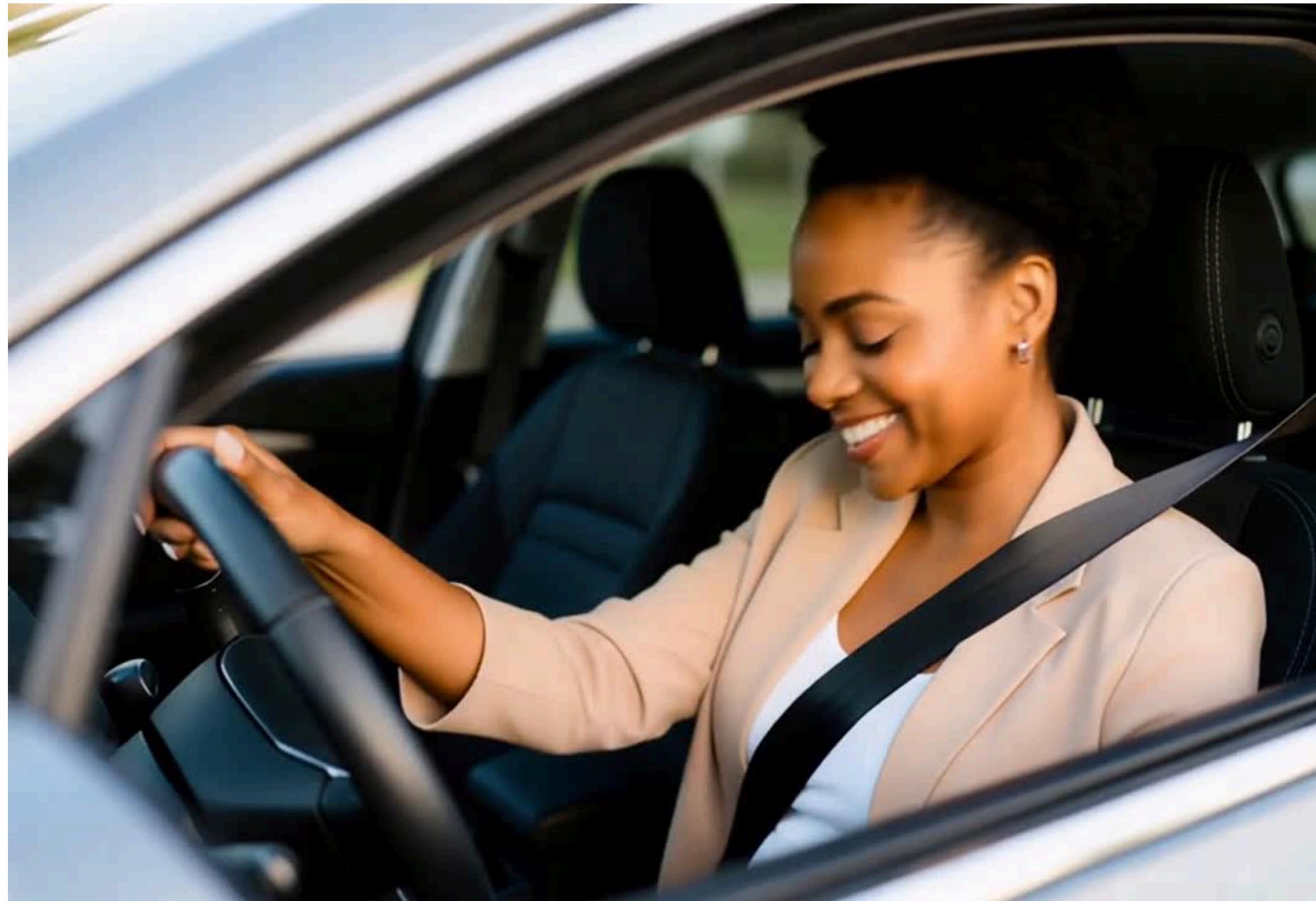


- The YOLOv5 model achieved excellent detection capabilities across the dataset
- Three out of four classes demonstrated strong, reliable performance

The Solution



An AI assistant that is integrated into your car



**Palesa after
discovering
Thabo The
Safe Keeper**



THABO

Your Guardian on the Road

It starts with you!



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