# Problem Statement

Distracted driving poses a significant threat to road safety, contributing to a large number of accidents and fatalities worldwide. Despite awareness campaigns and legislative measures, the prevalence of distracted driving behaviours remains a major concern. Traditional methods of enforcement and intervention are often ineffective in curbing these behaviours due to their reactive nature and limited resources.

In response to this challenge, we have proposed a model for **distracted driver detection** that leverages Computer vision-based systems to offer a promising approach for detecting various distractions, such as texting, eating, or adjusting electronic devices, by analysing visual cues from in-vehicle cameras in real time.

The problem addressed by this project is the development of an efficient and accurate behaviour detection system for identifying distracted drivers using computer vision techniques. The system aims to **detect and classify a range of distracted driving behaviours in real-time**, enabling timely intervention and prevention of potential accidents.

*Approach:*
To tackle this issue, we propose a **Hybrid CNN Framework** that combines the strengths of multiple pre-trained convolutional neural network architectures. By leveraging transfer learning and feature extraction from architectures like Xception, EfficientNetB0, and VGG16, our model can effectively capture a wide range of visual patterns associated with distracted driving behaviours.

We train our model on a diverse dataset of in-vehicle camera images, ensuring it can accurately detect various distracted driving behaviours across different driving conditions and environments.

Through this proactive approach, our goal is to provide law enforcement agencies, transportation authorities, and vehicle manufacturers with a powerful tool for promoting road safety and reducing the incidence of accidents caused by driver distraction.