A Project Report

on

DRIVER DROWSINESS DETECTION SYSTEM

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ABSTRACT

Driver drowsiness is a major contributing factor to road accidents worldwide. as studies suggest that accidents due to drivers getting drowsy or sleepy account for around 20% of all accidents and on certain long journey roads it's up to 50%. It is a serious issue and most people that have driven for long hours at night can relate to the fact that fatigue and slight brief state of unconsciousness can happen to anyone and everyone.

There has been an increase in safety systems in cars & other vehicles and many are now mandatory in vehicles, but all of them cannot help if a driver falls asleep behind the wheel even for a brief moment. This project aims to enhance road safety by developing a Driver Drowsiness Detection system that alerts the driver whenever signs of drowsiness or sleepiness are detected. The system analyses real-time video input from a camera calculates the eye aspect ratio, and triggers an alert when necessary.

The main objective of the project is to reduce the number of accidents caused by drowsy driving. To achieve this, the system employs computer vision techniques to track the driver's eyes continuously. By calculating the eye aspect ratio, which is a measure of eye openness, the system can identify periods of drowsiness or fatigue.

The implementation involves the use of Python programming language and OpenCV library to capture and process video frames in real-time. The eye aspect ratio is computed based on the detected eye landmarks, enabling the system to monitor changes in eye behaviour accurately. When the eye aspect ratio falls below a predefined threshold for a certain duration, indicating potential drowsiness, the system issues an audible alert, such as a beep sound, to prompt the driver's attention.

Through testing and evaluation, the system demonstrated promising results in accurately detecting driver drowsiness during simulation scenarios. By providing timely alerts, the Driver Drowsiness Detection system aims to prevent accidents and improve road safety by assisting drivers in staying alert and attentive during their journeys.

In conclusion, this project presents a robust and effective Driver Drowsiness Detection system designed to mitigate accidents caused by drowsy driving. The implementation of this system holds the potential to significantly reduce road accidents, safeguarding lives, and making our roads safer for everyone.

PROJECT GUIDE SIGNATURE

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