CVR COLLEGE OF ENGINEERING

(An UGC Autonomous Institution with NAAC 'A' Grade, Affiliated to JNTUH)
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MAJOR PROJECT

ACADEMIC YEAR: **2023-2024**

CLASS: IV Year CSE

SECTION: E

Title of Project Work: Driver Drowsiness Monitoring System using Visual Behavior and Machine Learning

ABSTRACT

Drowsy driving is one of the major causes of road accidents and death. Hence, detection of driver's fatigue and its indication is an active research area. Most of the conventional methods are either vehicle based, or behavioral based or physiological based. Few methods are intrusive and distract the driver, some require expensive sensors and data handling. Therefore, in this study, a low-cost, real-time driver's drowsiness detection system is developed with acceptable accuracy. In the developed system, a webcam records the video and driver's face is detected in each frame employing image processing techniques. Facial landmarks on the detected face are pointed and subsequently the eye aspect ratio, mouth opening ratio and nose length ratio are computed and depending on their values, drowsiness is detected based on developed adaptive thresholding. Machine learning algorithms have been implemented as well in an offline manner. A sensitivity of 95.58% and specificity of 100% has been achieved in Support Vector Machine based classification.

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