DRIVER DROWSINESS DETECTION USING DEEP LEARNING

ABSTRACT

Drowsiness is one of the major causes of road accidents in today’s time. Several misfortunes can be avoided if the driver is alerted in time. 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. The model works based on the images taken during driving and by analyzing driver’s state of eyes to further deduce the drowsiness state of the driver and alert the driver before any serious threat to road safety. The detection is achieved with three main steps, it begins with face detection and eye detection using the famous Haar Cascade algorithm followed by eye tracking. Using CNN classifier, the eyes are tracked. the software will set off an alarm once the driver keeps his/her eyes closed for a certain amount of time. The validation results indicate the precision and accuracy of the proposed model. Finally, we identify the challenges faced by the current systems and present the corresponding research opportunities.