Driver Drowsiness Detection Using Machine Learning

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Abstract: *In today's world, the number of road accidents that occur is increasing very rapidly. Some of these road accidents are minor whereas some of them may seriously injure people or even take their lives. These road accidents may involve collision of vehicles with each other or crashing the vehicles on to the buildings or others. Road accidents may even result in the death of people. It is estimated that the total deaths due to road accidents in India is around 1,50,000 per year which is approximately 400 accidents per day. Almost 3 lives are lost in every 10 minutes due to road accidents. one of the main factors that lead to road accidents are fatigue and drowsiness. Some popular methods that detect drowsiness use ECG and EEG, which are very complex. Even though these approaches are very precise, they require human involvement and have limitations that make them unsuitable for real-time driving. We're working on a technique to detect drowsiness in driver by monitoring the eyes and mouth while they're driving. The proposed method uses python along with two libraries OpenCV and dlib for facial landmark detection. A mathematical values Eye Aspect Ratio (EAR) and Mouth Aspect Ratio (MAR) is then calculated for determining whether the eyes are closed or not and weather the person is Yawning, The proposed systems detects these signs and plays an alarm.*

Keywords: Drowsiness, Alert Alarm, DLIB, EAR, MAR

REFERENCES

[1]. Facial landmarks with dlib, OpenCV and Python: https://www.pyimagesearch.com/2017/04/03/facial-landmarks-dlib-opencv-python/

[2]. Eye blink detection with OpenCV, Python, and DLIB: https://www.pyimagesearch.com/2017/04/24/eye-blink-detection-opencv-python-dlib/

[3]. Drowsiness Detection with OpenCV: https://www.pyimagesearch.com/2017/05/08/drowsiness-detection-opencv/

[4]. Real-Time Eye Blink Detection using Facial Landmarks:

[5]. http://vision.fe.uni-lj.si/cvww2016/proceedings/papers/05.pdf