



CSE541 Computer Vision

Weekly Report - 3

Section - 1

Submitted to faculty: Prof. Mehul Raval

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Tasks Performed:

- We had gone through various research papers related to our project to gain insight on further approach.

Research Paper: <https://www.ijert.org/driver-drowsiness-detection>

Information Obtained:

- A real-time system for detecting driver fatigue is described in this paper. Image processing is used for eye and face detection, with a HAAR-based cascade classifier employed for face detection. An algorithm is used to continuously track the driver's eyes, and the PERCLOS algorithm is used to identify drowsiness. The system issues a warning through an alarm and vibration when the driver shows signs of fatigue. The system uses computer vision and alcohol gas sensor combination to detect both drowsiness and alcohol intoxication. The proposed system includes two modules: face and eye detection followed by face tracking. The system is based on computer vision and embedded system applications and is a real-time, nonintrusive model. Various methods for detecting drowsiness automatically have been developed, including creating a dataset of drowsy facial expressions, combining visual, non-visual, and vehicular features, and developing wearable hardware such as smart watches to detect drowsiness.
- We also gained information related to various libraries which would be required like OpenCV (for face and eye detection), TensorFlow (Backend for Keras), Keras (to build the classification mode), Pygame (if alarm feature need to be added) and then installed all of them for future requirements.
- We then researched about how to take image as input from camera continuously and then detect face and eye from it.