SLEEP DETECTION SYSTEM USING MATLAB IMAGE PROCESSING

SYNOPSIS:

The objective was to develop a non-invasive system for detecting the closing of eyes of a person driving an automobile and provide an alarm indication thus preventing road accidents from occurring. Live video relay of the driver's eyes is processed using Image Processing in MATLAB to detect whether the eye is closed for more than a fixed duration thus indicating conditions of fatigue, alcohol consumption etc. The system proves to be more accurate and safe compared to the existing sleep detection system developed using Infrared Sensors and Micro-processors.

INTRODUCTION:

With the ever increasing population and usage of automobiles, there is an increase in the number of fatalities as well. India, unfortunately, boasts of a very high number of 142,485 traffic-related fatalities [1]. There are a number of reasons that can be attributed to this astonishing statistic, a few of primary concern being Fatigue, Alcohol Consumption and Sleep Deprivation. Hence, we developed a method to test for the closing of eyes of a person driving an automobile and providean alarm indication if the eyes are detected to be closed for more than a specified amount of time. MATLAB Image processing techniques are adopted to detect the closure of the eye by sectioning only that portion of the driver's face from a live video relay obtained using a front camera.

Processing a Static Image

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