A Real Time Non Intrusive Accident Avoidance System

Abstract

This paper presents a real time system for accident avoidance system based on drowsiness detection.

The proposed system uses the time–efficient image processing techniques to measure eyes closer count, blinking rate of eye and user yawning as the parameters to conclude drowsiness in the user.

The user could be any person like a computer operator controlling heavy machineries like cranes or performing time, operating critical operations on distant machines, hands free interaction with computational devices/machines, or handling critical operations like air traffic controlling etc. Same system can also be employed to detect and notifying the driver vigilance level and hence to avoid possibility of road accidents.

The proposed system continuously captures the image of the user using web camera and
detects face region, then focuses on eyes and lips using efficient image processing techniques to monitor their behavior. If abnormality either in behavior of eyes or mouth is detected, it indicates that the user is falling asleep therefore fatigue is concluded and a warning alarm is generated.

References

2. K.S.Chidanand Kumar and Brojeshwar Bhowmick “An Application for User Drowsiness Identification based on Pupil Detection using IR Camera.”, Innovation lab ,TCS,Kolkata,India.2008
5. www.jasonokane.com
8. imageprocessingindelphi.blogspot.com
19. Digital image processing: Rafael C. Gonzalez

Index Terms

Computer Science               Applied Sciences

Keywords

Face detection, eye blinking rate, eye closer count, yawning, edge density, threshold value