Abstract

There is much attentional impairment while driving that affect driver’s reaction. Among which driving while lethargic is one of the major causes behind road accidents, and exposes the driver to a large extent of crash risk compared to driving while alert. Therefore, the use of an assistive system that monitor a driver’s level of vigilance and alert the driver in case of lethargy can be significant in the prevention of accidents. This paper introduces a new approach towards detection of driver's lethargy based on yawning measurement and head movement. This involves several steps which includes the real time detection and tracking of head movement, the detection of yawning based on measuring the amount of changes in the mouth contour area. Test results express that the proposed system is able to measure the aforesaid parameters and detect driver’s lethargy.


16. X. Liu, G. Geng and X. Wang, "Automatically face detection based on BP neural network and Bayesian decision," in Sixth International Conference on Natural Computation (ICNC), Yantai, Shandong, 2010.


Index Terms

Computer Science

Control Systems

Keywords
Lethargy detection, Yawn detection, Face detection, Head movement detection