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Patent Search

Invention Title	DRIVER DROWSINESS: FACIAL EXPRESSIONS/EYE BLINKING/ YAWNING IDENTIFICATION AND ALERTING SYSTEM	
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Abstract:

The number of people while driving suffer from lack of sleep, huge number of people driving the vehicles on highway day and night, most of the accidents are happens du drowsiness of the driver. Car, bus, taxi and truck drivers and people travelling from long distance which it becomes very dangerous to drive when feeling sleepy. Driver eye blinking detects the camera whether blinked his/her eye or not. Hence, to prevent these accidents and predict the driver drowsiness to build a system using OpenCV and k and rings the alarm sensor and alert the driver when he feels sleepy. Internet of Things (IoT)-enabled driver drowsiness detection system implemented using Arduino microcontrollers. The IoT aspect of the system involves wireless communication modules (e.g., Bluetooth or Wi-Fi) to enable seamless connectivity between the Arduino de and external devices or cloud platforms. This investigation existing driver drowsiness detection solutions by offering a comprehensive and adaptable approach that consic facial expressions, eye blinking, and yawning as essential indicators of driver fatigue. Drowsy driving is a significant concern worldwide, contributing to numerous accident fatalities on the roads. To address this issue, the development of an effective methodology for driver drowsiness detection has become crucial. This invention aims to expl various factors and indicators of driver drowsiness, examine existing technologies, and discuss the design and implementation of an efficient methodology. Additionally, the invention will delve into the evaluation and comparison of the different methodologies and performance, highlighting the importance of continuous improvement and pot applications for the future. By leveraging advanced technologies and methodologies, we can enhance road safety and mitigate the risks associated with drowsy driving.

Complete Specification

Description:Implementing a driver drowsiness detection system with IoT involves integrating various components that collect, process, and communicate data. The aim this invention to develop for driver drowsiness detection can significantly enhance road safety. By accurately detecting drowsiness, it enables timely alerts and warnings drivers, allowing them to take necessary actions to prevent accidents. Facial expression analysis utilize computer vision techniques to detect changes in facial expression associated with drowsiness. Features such as drooping eyes or a relaxed facial expression can be indicators of drowsiness and trigger appropriate alerts. Steering wheel movement analysis monitor patterns of steering wheel input to detect signs of drowsiness. Sudden and inconsistent movements or a lack of corrective actions can indicators and prompt necessary interventions. Machine learning comes into play when developing the actual drowsiness detection. There are various models we can usuch as Support Vector Machines (SVM), Random Forests, or Artificial Neural Networks (ANN). These models learn from the extracted features and are trained to identify patterns associated with drowsiness. Choosing the right model depends on factors like computational efficiency and the complexity of the data.

Accidents caused by drowsy driving can have devastating consequences. This effective methodology can help reduce the number of accidents and ultimately save lives. E detecting drowsiness in real-time, it provides an opportunity to intervene before a potential accident occurs. Apart from the human toll, drowsy driving accidents also lea to substantial economic losses. These include medical expenses, property damage, and lost productivity. By reducing the number of accidents through effective drowsing detection, it can minimize these economic burdens. Drowsiness can manifest itself through various physiological signs. These include drooping eyelids, frequent yawning blurred vision, and slower reaction times. By monitoring these indicators, this methodology can determine the level of drowsiness and trigger appropriate alerts. In addit to physiological signs, there are behavioural signs that can indicate driver drowsiness. These may include drifting out of the lane, inconsistent speed, or difficulty

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