

The Combined Methodology To Detect Onboard Driver Fatigue

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Abstract : Fatigue is a feeling of extreme physical or mental tiredness. Almost everyone becomes fatigued at some time, but driver's fatigue is a serious problem that leads to thousands of automobile crashes each year. Fatigue process is often a change from the alertness and vigor state to the tiredness and weakness state. It is not only accompanied by drowsiness but also has a negative impact on mood. There have been studies to detect and quantify fatigue from the measurement of physiology variables such as electroencephalogram (EEG), electrooculogram (EOG), and electromyogram (EMG). This project involves a multimodal sensing of driver's drowsiness. The first method is to count the eye blinking rate. In the second level, we authenticate the results of eye blink module with a grip sensor. The Flexiforce sensor is placed over the steering wheel. In the third level, the activities are sensed, the time elapsed from the driver's last activity is counted here. The activities in the sense: Changing gear, applying brake, pressing sound horns, and turning the steering wheel. Absence of these activities is also an indicator of fatigue.

Keywords : eye blink sensor, Flexiforce sensor, EEG, EOG, EMG

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