

Driver Drowsiness Detection using Brain Computer Interface

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Abstract: In the event of a road collision, drowsiness is becoming a serious problem. Typically, eyeblink rate, yawning, grip force on the wheel, and other characteristics can be used to determine whether someone is sleeping. However, all of these measurement approaches will only examine a person's physical activities. Sometimes folks will mentally nod off for a short while while keeping their eyes open. Driving accidents will become quite severe as a result. Therefore, in our suggested project effort, we are using EEG signals based on Brain- Computer Interface (BCI) technology to analyse the mental activities of the brain. Analysing the brain signals is the project's main task. Numerous millions of linked neurons make up the human brain. The human mind will cause this neuron pattern to shift. Each time a pattern forms, a distinct electric brain signal will emerge. The brain signal for attention will shift from the typical state if a person is mentally asleep while keeping their eyes open. In order to assess the amount of attention, this research uses a brain wave sensor that can gather EEG-based brain signals of various frequencies and amplitudes, transform those signals into packets, and communicate those packets through Bluetooth. The Level Splitter Section (LSS) analyses the level, warns against drowsy driving, and retains the car under self-control until the driver is awake. When it comes to road transit, this can save many lives.

Keywords: drowsiness

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