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Drowsiness Detection System using ML

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Abstract: *The number of automobile accidents due to driver drowsiness is increasing at an alarming rate. If you have driven before, you've been drowsy at the wheel at some point. It's not something we like to admit but it's an important problem with serious consequences that needs to be addressed. The scariest part is that drowsy driving isn't just falling asleep while driving. Drowsy driving can be as small as a brief state of inattentiveness when the driver is not paying full attention to the road. An automated non-contact system that can identify driver drowsiness early is the need of the hour. Our project describes a machine learning approach for drowsiness detection. Face detection is employed to locate the regions of the driver's eyes, which are used as the templates for eye tracking in subsequent frames. Finally, the tracked eye's images are used for drowsiness detection in order to generate warning alarms. This proposed approach has three stages: detecting Face, detecting Eyes and detecting drowsiness. Thus, we propose a system to locate, track, and analyse both the drivers face and eyes to measure PERCLOS, a scientifically supported measure of drowsiness associated with slow eye closure.*

Keywords: Driver drowsiness, eye detection, yawn detection, blink pattern, fatigue

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