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(57) Abstract :

The present invention provides a drowsiness detection system (100) for a vehicle that includes an image acquisition unit (102) attached to the vehicle's dashboard, and a galvanic skin response (GSR) sensor (104) positioned on the driver's fingers. The system utilizes machine learning techniques to analyze the acquired image and skin conductance data to determine the driver's level of drowsiness. Upon detecting drowsiness, an activation signal is transmitted to a speaker (112) attached to the vehicle, which emits a pre-defined sound designed to alert the driver. The system incorporates various machine learning techniques for facial attribute extraction, additionally, a fuzzy logic-based inference engine is employed to analyze the extracted attributes and skin conductance level. The system further adjusts the sound pattern emitted by the speaker based on the determined level of drowsiness, progressively alerting the driver as the level increases.

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