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(57) Abstract :

The present invention relates to an integrated driver health monitoring and alcohol detection system for enhanced vehicle safety and accident prevention. The system incorporates sensors to monitor critical driver health parameters such as heart rate, blood pressure, eye blink patterns, and blood alcohol concentration (BAC). A central processing module analyzes real-time data from these sensors to assess the driver's physical and mental fitness to operate the vehicle. In case of abnormal conditions like fatigue, elevated stress levels, or alcohol impairment, the system proactively prevents the vehicle from starting or issues alerts to the driver. This innovative system aims to reduce accidents caused by human factors such as fatigue, stress, and intoxication, offering a comprehensive and proactive approach to vehicle safety. The system is modular, scalable, and easily integrated into existing vehicle technologies, ensuring long-term applicability and adaptation to future advancements.

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