ABSTRACT

The Driver Fatigue Detection System is designed to enhance road safety by monitoring and responding to signs of driver fatigue. This system employs a suite of sensors, including infrared sensors for detecting eye blinks, heart rate monitors, and accelerometers, to assess the driver's state. The system processes this data in real-time using microcontroller platforms like Arduino or Raspberry Pi and integrates a range of responsive features to address fatigue detection. When the system detects that the driver is falling asleep, it activates multiple safety measures: a buzzer sounds to alert the driver, the vehicle is automatically stopped to prevent further risk, and an LED light is turned on to provide a visual signal. Additionally, the system sends a notification message to alert relevant parties about the driver's condition. These combined responses aim to mitigate the risk of accidents caused by driver fatigue, ensuring a safer driving experience.

The system also prioritizes user comfort with its ergonomic design while maintaining high performance. It ensures continuous data transmission through reliable wireless communication and adheres to strict data privacy and security standards. By integrating these functionalities, the Driver Fatigue Detection System provides a comprehensive solution to detect and respond to driver fatigue effectively.

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