

A Smart Vehicle Safety System using LoRa and CAN Integration

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Abstract: *Studies show that drowsy driving contributes to a significant number of crashes and fatalities each year, making it a serious safety concern that greatly increases the risk of accidents and injuries. According to the NHTSA, sleepy driving contributes to more than 100,000 collisions each year, which cause thousands of injuries and fatalities. To resolve this issue we have a solution which integrates both hardware and software. The drowsiness of the driver is detected using facial recognition system with computer vision algorithms and give alerts to the driver. Our solution incorporates GSM and GPRS module to send live location to the respective person or healthcare center. Also the solution involves LoRa module to alert other drivers around the vehicle with a particular range. To make this more effective approach and reduce accidents CAN protocol is used to communicate between ECU and other systems in the vehicle, to automatically reduce the speed of vehicle. It is a user friendly approach as it does not consists of any wearable sensor which may cause irritation to the drivers or maybe wear off during fatigue. Using this the accidents due to fatigue can be drastically reduced and avoided*

Keywords: Drowsiness, LoRa, Alert, Traffic Analysis, CAN Module

