Automated Guidance System for Motor Vehicles

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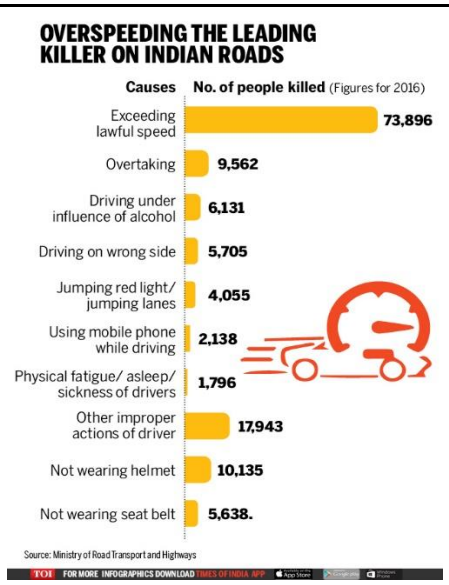
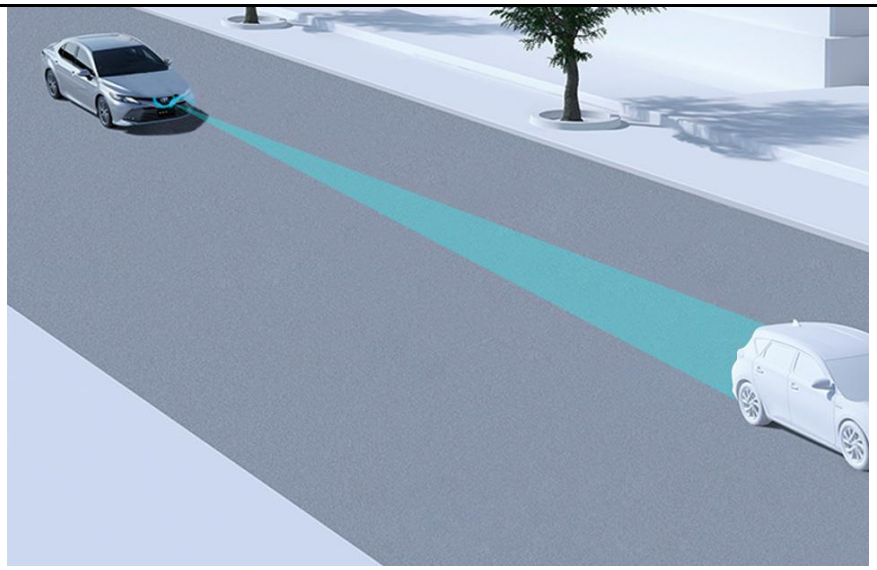




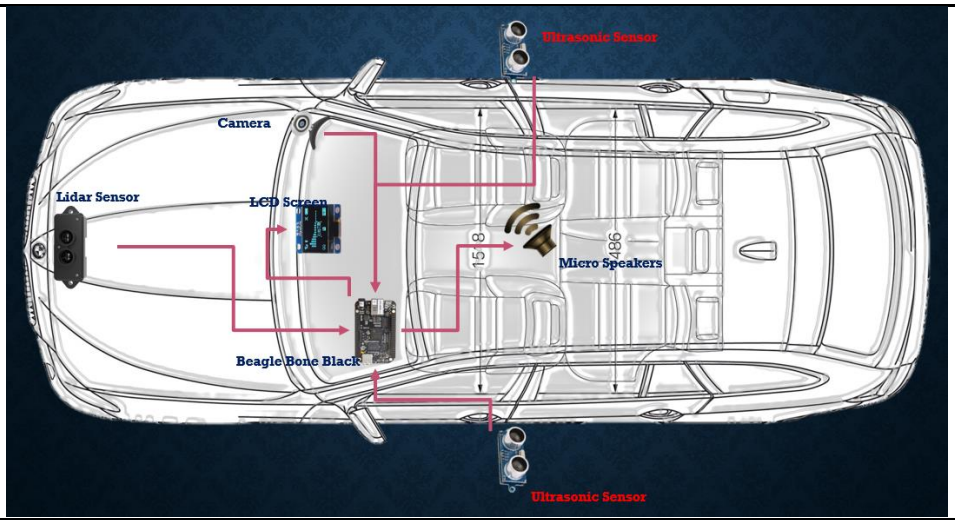
About

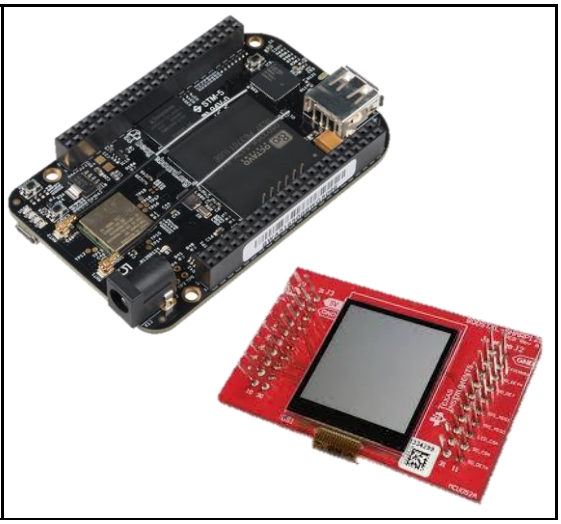
Motor Vehicle Collisions are responsible for the death of 150,000 citizens annually in India. While a number of factors such as subpar infrastructure, poor visibility etc come into play, in the majority of cases, humans are to blame. Reckless driving presents itself in many forms, such as drunk driving, driving while texting, not paying attention to the road, driving while sleepy/tired etc and can result in a huge loss to life and limb.

Our project aims at helping prevent motor vehicle collisions through the continuous monitoring of (both) external and internal surroundings of the vehicle. Externally, we aim to monitor the vehicle's location with respect to other vehicles, providing guidance for minimum safety distances for braking, situational awareness in poor visibility conditions and alerting the driver of traffic in the blind spots. Internally, we will monitor the attentiveness and alertness of the driver through computer vision, ensuring that he/she is fit to drive.

The guidance system will be primarily aimed at (but not limited to) car-hailing apps, truck driving companies and personal car owners. It will enable the creation of a safe driving environment in a country which has one of the highest number of road accidents (per capita). Furthermore, it could, to a limited extent, help in crash analysis and help keep rash driver off the road, enhancing public safety.

Road collisions is one of the leading causes of preventable death in India, and our project can greatly help alleviate the drastic situation of the negligent driving in India.





Impact

Key Achievements:

- Analyzing current speed and distance with car infront to determine the optimum minimum braking distance.
- Monitoring the alertness of the driver through eye tracking
- Alerting driver of incoming vehicles/pedestrians in blind spots

Key Learnings:

- Applying Haar Cascade for eye tracking on the camera module
- Opportunity to learn about the Texas Instruments BeagleBoneBlack board
- Creation of a business and technical model surrounding a project
- Creation and proper presentation/pitching of a startup idea

Contact

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