



AUTONOMOUS VEHICLE WITH TRAFFIC DENSITY AVOIDANCE AND LIVE VIDEO STREAMING USING ARTIFICIAL INTELLIGENCE WITH EMBEDDED C

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ABSTRACT

Autonomous car is the newest Technology. In driver based car there are more human error which causes the more amount of accident rates so this concept helps to decrease the human error which lead to accidents.

Keywords: sensors, transmitter, receiver

I. INTRODUCTION

The autonomous car is one step towards smart city and is applicable for all the handicap people especially blind people and is suitable for all day to day transport activities. The motive behind the whole concept of the driverless car was to avoid accidents that take place now days in large numbers.

Fuel conservation can be done at maximum by efficient driving techniques and speed limits Strict obedience of traffic rules especially in India as many of the human drivers ignore and neglect the traffic rules such as not following of traffic signal lights, improper lane keeping, not following of speed limits especially in city areas, blowing horns in horn restricted areas such as near educational institutes and organizations etc. Efficient use of parking space can be achieved using autonomous cars as they include automated parking algorithms and sensors to avoid collision with other parked vehicles which will in turn increase space for

parking. There is an increased demand for these cars in India itself. This is due to the careless attitude of drivers (in the city, as well as on highways and mountain passing).

II. PROBLEM STATEMENT

The purpose of this project is the creation of an autonomous car which should be able to drive automatically without any driver in the urban areas by following the Road traffic rules with live video streaming along with zonal speed control.

III. PROPOSED SYSTEM

- Here we design a system that overcomes the drawbacks of all the aforementioned systems.
- Our main focus was on Following Vehicle, which detects and avoids obstacles, coordinate with live video streaming, and follow the route.
- . For another application, it checks vehicles around and automatically moves slowly behind the traffic until it gets out of traffic jam situation.
- When the vehicle enters in the normal area it speed does not decrease and it goes normally no action is performed. When the vehicle

enters into the restricted areas that means it enters into the speed limiting.

- Whenever it enters the transmitter module just send an information that contains how much speed a vehicle can go inside the speed limited region. Then the signal or information is received by the receiver and the signal acquired from the speed meter is also given to the controller.
- The signal is basically analogue in nature that will be converted into digital so only the micro controller able to process the signal.

IV. ADVANTAGES

- Without the need for a driver
- Travelers would be able to journey overnight and sleep for the duration
- Traffic could be coordinated more easily in urban areas to prevent long tailbacks at busy times. Commute times could be reduced drastically.
- Sensory technology could potentially perceive the environment better than human senses, seeing farther ahead, better in poor visibility, detecting smaller and subtler obstacles, more reasons for less traffic accidents.

V. SYSTEM ARCHITECTURE

4.1 Design Concepts

- **Robot Unit:**

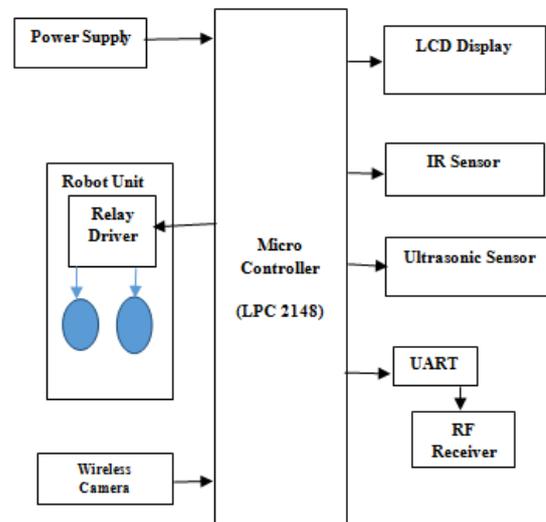


Fig1: Architecture of Robot Unit

Robot Unit: In fig1, it shows how the vehicle performs and all the hardware used to create the robot. Controller is the brain of the project. All components are connected to controller. To work with controller we need power supply. For moving forward motors are used. To recognize the objects while driving IR sensor is used.

- **Transmitting Unit:**

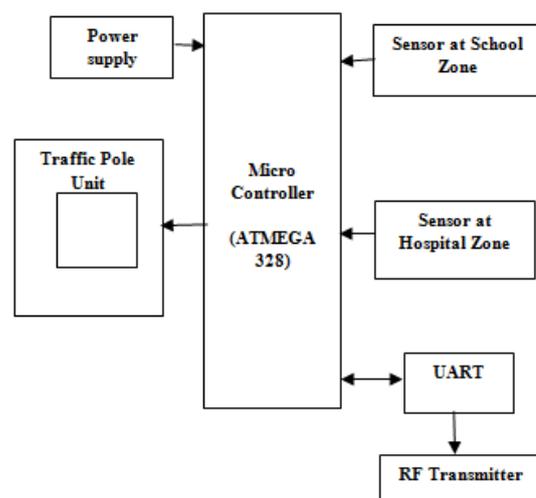


Fig2: Architecture of Transmitting Unit

Transmitting Unit: Transmitting unit is the overview of how the vehicle moves in different



areas. In the above fig. it shows how the vehicle moves in traffic signal, school zone and hospital zone.

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RESULTS

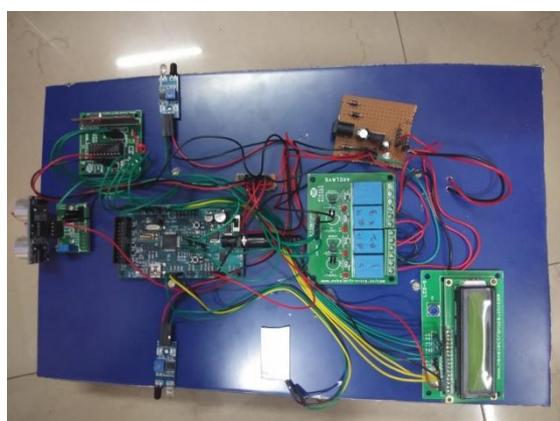


Fig 3: Vehicle Unit



Fig 3: Transmitting Unit

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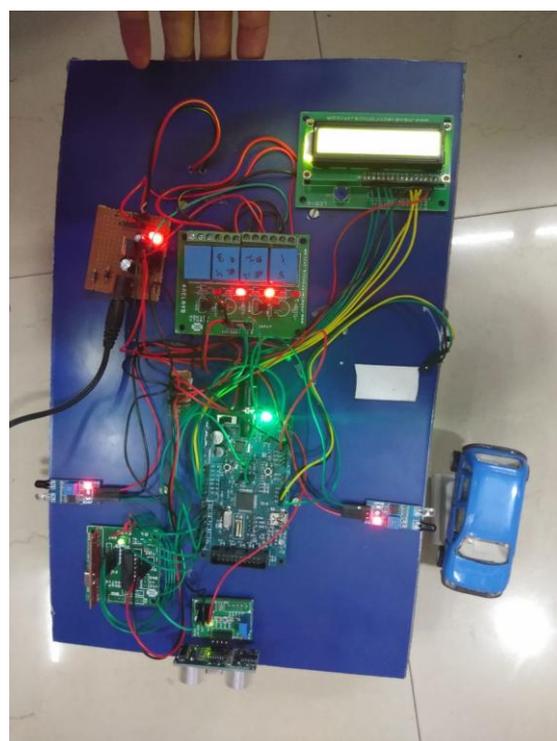


Fig 4: Sensing objects near vehicle unit

VI. CONCLUSION

- The demonstration of the project is done using prototype model where we are achieving all the objectives mentioned above.
- The technology helps to minimize the loss of control by improving vehicle's stability as these are designed to minimize accidents by



addressing one of the main cause of collisions:

Driving error, distraction, drowsiness.

- But still these vehicles have a lot of hurdles to go through before they become everyday technology.

VII. REFERENCES

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