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A REVIEW PAPER ON SELF DRIVING CAR USING IOT AND ML

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ABSTRACT

The main aim of the car in the present period is automated to give the driver a more relaxed driving experience. The most important thing in the world of automation has begun and is working on a self-driving car. In this work, we have primarily concentrated on self-driving cars, such as those developed by Google. The car basically makes intelligent decisions in traffic and takes the shortest route to its destination state. The fundamental benefit of an autonomous car is that it allows the driver to relax instead of constantly pressing the brake and clutch.

KEYWORDS

Machine Learning, Convolutional Neural Network, Autonomous, Internet of Things

1. Introduction

The automotive industry, automated vehicles represent a technological advancement. Despite the fact that autonomous vehicles are designed for humanity, they are the most expensive. A small-scale three-wheel vehicle robotics prototype was designed in the treatise, taking into account the various characteristics and costs, and it automatically achieves the destination of another vehicle to follow. An Autonomous car is one that can sense its environment and operate without the need for human involvement. A human is not necessary to assume control of the car at any point, nor is he or she required to be present in the vehicle at all. A self-driving automobile can go anywhere a traditional car and accomplish everything a skilled human driver can do.
In the Social benefits have the potential to reduce crashes, prevent injuries and saves time. All Serious motor vehicle occur due to human error.

2. Literature Survey

The autonomous car uses Convolutional Neural Network, Raspberry Pi, and the Arduino uno. The proposed concept uses the camera mounted on a Raspberry Pi to capture an image. The Raspberry Pi and the laptop both are linked to the same network, and the Raspberry Pi transmits the image taken to the convolutional neural network. Before being fed into the neural network, the image is gray scaled. The model generates one of four results. when generating predictions: H. Left, Right, Forward, or Stop. The proper Arduino signal is triggered when the outcome is expected, which helps the automobile go in a certain direction using its controller. Working Model of Self-Driving Car Using

Convolutional Neural Networks is a publication that describes a working model of a self-driving car that uses convolutional neural.

The vehicle will arrive at a given location safely and discreetly by minimizing the risk of human error. Drivers' faults are a common cause of road accidents, and with cell phones, car entertainment programs, overcrowded traffic, and extremely complex road systems, they are not easy to navigate. The strategy or measure for determining the uneven, marked or unmarked edges.

3.Description of components:

3.1 Arduino UNO R3 –

Arduino Uno is a microcontroller board that uses the ATmega328P microcontroller (datasheet). It contains 14 digital input/output pins, six analogue inputs, 16 MHz ceramic resonator , a USB connector, Power Jack, an ICSP header, and a reset button.

Fig1:- Arduino UNO R3

3.2 The Motor Driver:-

The L298 Motor Driver Module is a high-performance motor driver for DC and stepper motors. An L298 motor driver IC and a 78M05 5V regulator are included in this module.

Fig2:- The Motor Driver

3.3 Car Chassis

The structural support for the object's construction and function is in the form of a car chassis. A vehicle frame is an example . A plural chassis is the bearing framework of an artificial item, the underpart of a motor vehicle, on which the body is placed.

Fig3 :- Car Chassis

3.4. Jumper wire:

It is used for connecting the components without soldering then start your dead automobile battery with jumper cables, booster cables or jumper leads (all three phrases refer to the same device).

Fig4:- Jumper Wire

4. Features

4.1 Lane Control

This refers to the ability to stay securely within the lane by keeping track of distances to lane markings, road borders, and other vehicles.

4.2 Obstacle Detection

Lidar is used to detect barriers and has a range of 250 to 400 meters. It can also recognize the position of obstacles before approaching them and respond accordingly.

4.3 Video and Signal detection

Different types of cameras are installed at the different position for capturing videos and also detect the signal while driving the car.

4.4 The Position of an Object

Ultrasonic sensors are used to measure the position of object such as other while parking also checks the position..

5. Result

It Works like human intelligence. It also provide the shortest path and reduce the traffic .Energy costs also saved.

6. The Conclusion

For self-driving cars, this is a significant step forward. Vehicles can be set to autonomously travel to their destination using this method by continuously obtaining direction from another vehicle moving to the same destination and another vehicle ahead of them moving to the same destination; however, timing discrepancies may occur. The purpose of a robotic vehicle's navigation method is to get the robot to a predetermined location in an unknown environment. One of the most important features of an autonomous system is navigation planning.

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