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Automobile Operator in Rubus Ironware

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ABSTRACT: The automobiles are focused to be automated to give human driver relaxed driving. In the field of automobile, various aspects have been considered which makes a vehicle automated. Since taking intelligent decisions in the traffic is also an issue for the automated vehicle. The other application is automated driving, during the heavy traffic jam, it relaxes driver from continuously pushing brake, accelerator or clutch. This can be done by a vehicle automatically following the destination of another vehicle. The following vehicle whenever receives a message through GSM, the message is sent to the recipient immediately.

KEYWORDS:Human driver relaxed driving, Automatic vehicle, Self-driving car, Future Car, Autonomous Car.

I. INTRODUCTION

Benefits such as reducing pollution and improving road safety. Advanced control systems interpret sensory information to identify appropriate navigational paths, as well as obstacles and relevant signage. Self-driving cars have control systems that are capable of analysing sensory data to distinguish between different cars on the road. This is very useful in planning a path to the desired destination.

Non-autonomous vehicles have been around several years, and based on online survey we have found that ratio of accident happening due to human error is quite high and reason being Human beings are not well-suited to travel at high speed. As speed increases, our time and distance perception degrade. Fuel wastage caused by human error is quite high. Due to human error, traffic congestion is found to increase.

II. RELATED WORK

Learning how to drive in places like unruly Boston, a land of creative left turns and seemingly optional yields comes with its challenges. But the aggressive driving and the complexity of the city's twisting streets pale in comparison to the developing world. The following vehicle will follow the target vehicle automatically. This direction is then compared with Robot's current direction and after rotating vehicle in that direction, the vehicle starts moving forward. Ultrasonic Sensors have been fixed all around the vehicle so that the vehicle detect the obstacle and get away from it.

Tensor flow plays a large part in the training process, it allows the creation of large and complex neural networks. Furthermore, Tensor flow is an open source platform that allows computation to be carried out on multiple CPU's**.** Human drivers notoriously bend rules and take risks, but driver less cars will obey every road rule and posted speed

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limit. Over 80% of car crashes are caused by driver error. There would be less user errors and fewer mistakes on the roads if all vehicles became driver less. Drunk and drugged drivers would also be a thing of the past, and passengers might even sleep without risking safety. Travellers would be able to journey overnight and sleep for the duration. Without the need for a driver, cars could become mini leisure rooms. Without the need for controls, there would be more space available inside the vehicle and no need for passengers to face forwards. Reduced need for safety gaps, lanes, and shoulders means that road capacities for vehicles would be significantly increased. Speed limits could be safely increased, thereby shortening journey times. Once the software can send control messages and receive the vehicle's state from both external sensors and internal devices through the can interface, the desired trajectory can be executed.

III. PROPOSED ALGORITHM

The current proposed system uses CNN (Convolutional Neural Network) technique, where we use cameras to detect the path that will be compares the dataset. The camera will capture this path and process it using a raspberry pi and instruct the car to move on specified direction. The ultrasonic sensor, to detect different obstacles next to it, if the obstacles get too close or about to make contact with the vehicle then the vehicle will stop until the obstacle near it moves.

Comparison of technologies across other similar vehicles with collision detection. Obstacle detection in the car is based on multiple sensors. Designing self-driving vehicles suitable for people with disabilities. Finding the route easily. Reduced accident and decreased death rate. Computerized vehicles could coordinate their movements with each other, drastically improving their efficiency. Use of advanced sensor technologies in the communications industry can clearly identify complex objects and it is drive simple.

IV. SIMULATION RESULTS

The Autonomous vehicle will be able to detect road by Lane detection and Detects and Avoids the obstacle by Ultra sonic sensor. This is supports the driverless mode with above features. Our project focus on the Vehicle and Traffic light detection. This is done by Raspberry pi and its camera. Arduino also used for the

We connected required components needed for the Arduino and then there after we connected the output of the Arduino to the motor driver, which would be used to output specify power to modelled car to control its speed. Once the sensors were implemented in the model, the camera which was going capture the video footage, to detect the pattern was connected to the Raspberry pie. The processing of the image was done remotely on the external system. Hence using the radio waves, we send the data from the raspberry pie to the system, process the data and then send the required output back to the raspberry pie. The system will process on determining what obstacles are detected and what it should when it detects an obstacle in the environment. The obstacle could be another vehicle or pedestrians crossing the road.

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Fig 4.1 Lane Detection

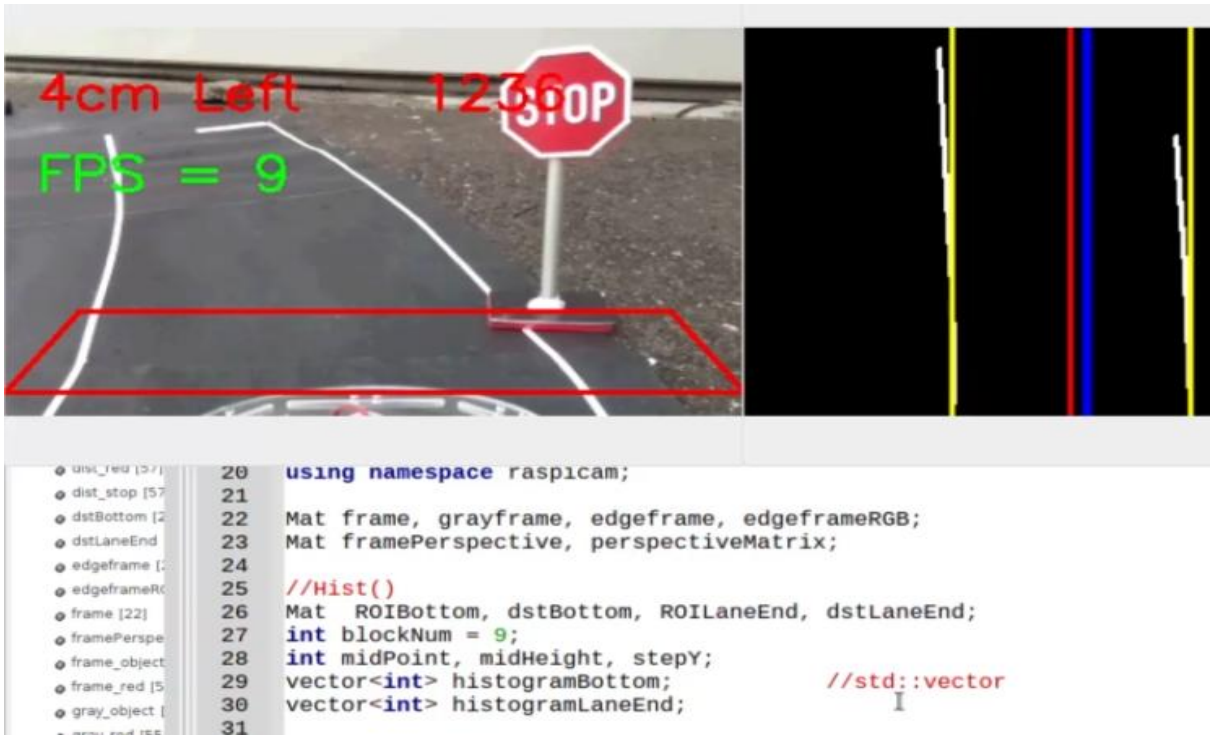

Fig 4.2 Stop Sign.

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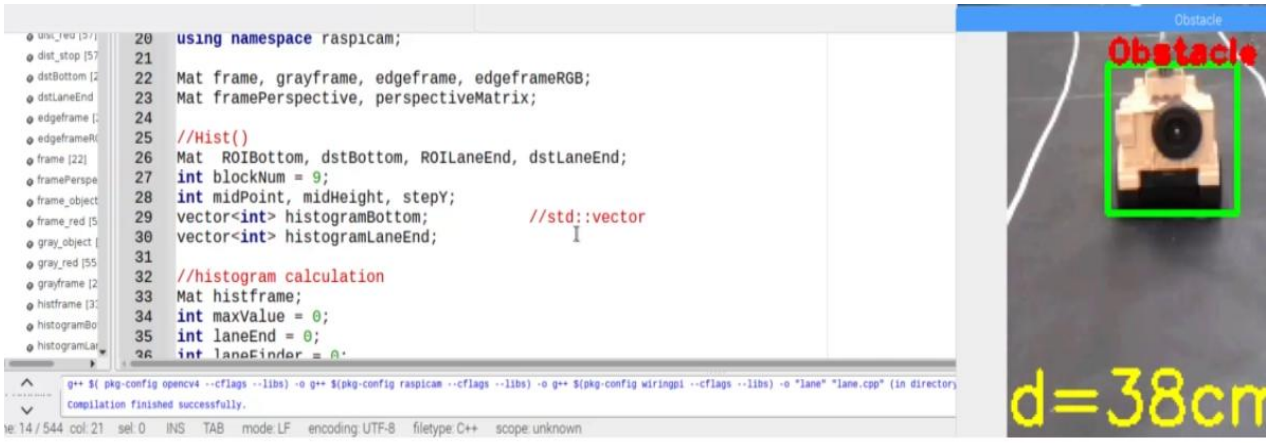

Fig 4.3 Obstacle Detection

IV. CONCLUSION AND FUTURE WORK

This is an advanced step for autonomous driving vehicles. With the help of this algorithm, vehicles can be set to automatically navigate to the destination location by continuously receiving the direction from another vehicle moving ahead to the same destination. The robotic vehicle routes itself with the guidance of another vehicle moving ahead to the same destination, therefore, deviations in time can occur. The goal of navigation process for a robotic vehicle is to move the robot to a known destination in an unknown environment.

Most people would agree that driverless cars are the future. ... Research has shown that the number of U.S. deaths resulting from road accidents could be reduced by more than 90% by the year 2050 because of self-driving cars. However, this is not the only effect driverless cars will have on our future And companies like Google, Tesla, and Uber are each pushing the limits of innovation to dominate the space. In a recent report, Business Insider predicted that as many as 10 million self-driving cars would be on the road as early as 2020.

REFERENCES

[1] V. Rastogi. (2017). Virtual reality based simulation tested for evaluation of autonomous vehicle behaviour algorithms. A Thesis Presented to the Graduate School of Clemson University in Partial Fulfilment of the Requirements for the Degree Master of Science Computer Science. Clemson University.
[2] I. E.Sutherland. (1968). A head-mounted three dimensional display. In Proceedings of the AFIPS Fall Joint Computer Conference, pp. 757–764.
[3] J. Fredriksson, B. Kulcsar, & J. Sjöberg. (2015). Proceedings of the 3rd international symposium on future active safety technology towards zero traffic accidents. Available at:
http://publications.lib.chalmers.se/records/fulltext/222422/local_222422.pdf
[4] MIT Racecar. (2017). MIT race car mobile platform. Available: http://racecar.mit.edu.
[5] Openzeka. (2019). Openzeka online. Available at: https://openzeka.com/.
[6] ROS. (2019). Robot operating system. Available at: http://www.ros.org/.
[7] L. Joseph. (2018). Robot operating system for absolute beginners_ robotics programming made easy-apress. Available at:
https://www.apress.com/gp/book/9781484234044.
[8] http://wiki.ros.org/rospy.
[9] M. Bojarski et al. (2016). End to end learning for self-driving cars. Available at:
https://images.nvidia.com/content/tegra/automotive/images/2016/solutions/pdf/end-to-end-dl-using-px.pdf.
[10] Y. LeCun et al. (1989). Back propagation applied to handwritten zip code recognition. Neural Computer, pp. 541–551.