International Journal of Advances in Engineering and Management (IJAEM)
Volume 2, Issue 5, pp: 891-893 www.ijaem.net ISSN: 2395-5252

Multi Sensor Tracking Object In Autonomous Vehicle

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Date of Submission: 30-08-2020 Date of Acceptance: 15-09-2020

ABSTRACTS: Autonomous vehicle are popular now a days its works on artificial intelligence or own intelligence But important role of sensor and its work. Sensors are widely used in autonomous vehicle and other technology. So sensor are identify the object and remove any obstacle .autonomous vehicle are object oriented and software based technology.so we can make easier our daily life and without any human interaction. Autonomous vehicle use in ABS (anti barking system) its protect human accident and object collides. Safety is the important factor in driving. In this car have various facilities easy to work on computer vision. Its identify the object stable or movable and action of the sensor.in this vehicle use variety of sensor such as RADAR, GPS, LIDAR, CAMERA SENOR, ODOMETR, Inertial measurement and descry their surroundings. in this technology use drive assistant like Collision Mitigation by Breaking, Adaptive Cruise control, Forward Collision Warning system its insure safety while driving. All sensors collect the data and see the further process and taking action. In autonomous driving different sensor have a different strength and weakness. Each sensor have limit of accuracy and used of multi sensor remove this type of defect.in this thesis used multi sensor and perceive surrounding vehicle. When give the information presence of the object in the frame. Its use to monitoring the object and tracking the autonomous vehicle.so the experimental result on KITTI dataset.

I. INTRODUCTION

Autonomous vehicle works o**n** powerful sensor. Today all industry work on autonomous vehicle project. Autonomous vehicle are very massive technology and these are a useful our life. This type of vehicle are work on without human activity and only work on programming, and use of different type of sensor like Lidar sensor ,camera sensor ,and Radar. Its work fully automated. So many type of industries testing of driverless car system. Company like testa,google ,uber etc. these are manufacturing driverless car and transport service without human interaction. We know that about automated vehicle are very important technology in the future and today are very use in this car GPS system, satellite navigation system. Its car moving without human driver its work on GPS system and we set the route and these sscars reach that destination. Important instrument of this car are sensor, sensor is a very useful part of autonomous vehicle .camera sensor capture image of route and find the destination. Sensor detects the movement of human,vehicles, and traffic signals. Autonomous vehicle are also use for logistic purpose and specifically transportation of goods on roads. Some country is use autonomous vehicle for transportation system and operated of so many kind of work in county like United States of America, Western Europe and Australia also where a autonomous vehicles are already operated. In Autonomous vehicle use are very advanced technology for safety aspect driver and vehicle .autonomous vehicle after few year are multi work of everywhere to operate and use of all place in transportation system and these are use of every type of work in human purpose .So today are our technology improve of autonomous vehicle day by day and improve their efficiency and security also.it is good step for upcoming technology. Autonomous vehicle is received signal and then analyse the signal and the give output's goes anywhere without and human driver by GPS and navigation system. Its rely on complex algorithm and powerful software and programming also.

II. LITERATURE REVIEW

The technical aspect of the autonomous vehicle explores the theoretical hypothesis realistic order to come conclusion of the further result. In autonomous vehicle are the future are fully technology based and fully to advanced computer programming and also self-driving car . in this thesis many type of instrument use in the

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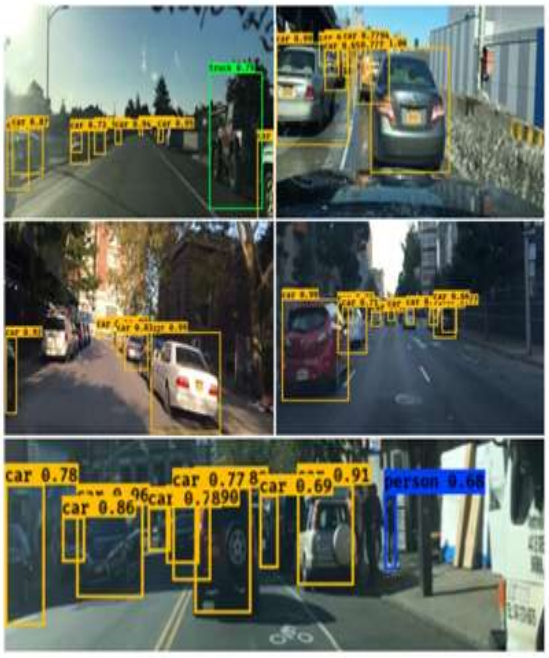
autonomous vehicle such as R-CNNand Lidar Mot system. This is the real time prediction of and application like ADAS FCW and navigation system.in 3D condition bounding box are detect the object and trajectory. Mostly mot are two type such as first is offline tracking and make frame of the object And second online based on algorithms and make trajectory use the past and future-CNN are two network first is convolution neutral network and second is region proposal netwok.in this chapter C-NN are faster architecture use of future frame. The result satisfied and improve the sensor performance accuracy is about 87.83 and the use many type of sensor and the sensor works properly and identify the object .Make sure no any obstacle in the path and how to identify the object shape and size find the camera sensor .and the is capture the image of object and in autonomous vehicle .In autonomous vehicle rare important part of sensor like lidar is object tracking sensor and the object identify .and also giving information of the navigation system by GPS. This result show the in future our technology are lot ofobject identity by the sensor and make easy to operate autonomous vehicle and decrease the accident in the future so this technology are import for everyone in the future and transportation also.

METHODOLOGY AND EXPERIMENT



This experiment are motivation in by development in 3D multi object tracking in autonomous vehicle using by sensor and its use camera Lidar .This thesis have 2D And 3D detection bounding box and the dynamic model for this statement .The prediction of the object and many type of sensor and its making frame of the object .use many type of theorem such as Bayesian theorem .the object tracking the in 3D box and 8 coordinates This method improve by sensor and tracking sensor technology which is such as camera Lidar ,GPS. and using kalman fitter their algorithm. Use also Hungarian theorem.

III. RESULT AND DISCUSSION

These types of method track the autonomous vehicle and their position .and car in the surrounding and make the image of the object. The image of the 2D coordinate of the image plane this type of method used by find the velocity and track the location of the object .mostly in autonomous vehicle are find the multi object of on path. The new path of the autonomous vehicle are processing when working of the sensor and identify the path.in this stage of the vehicle us many type of algorithm and the proposed the data of the computer vision. And the track the method of the path can run 250 Hz frame per second on Intel i7 2.5 GHz.

IV. CONCLUSION

Conclusion is the sensor it's observe the object and better accuracy in autonomous vehiclesowe can better for human and future technology.so conclusion is we identify of the many type of the object .and the no worries about anyaccident in future.Future scope in autonomous vehicle of the sensor is important and the no worries about accident in future planning. So we can say sensor is important for autonomous vehicle and their accuracy. So in future multi sensor are widely used in autonomous vehicle and many type of the work bysensor.so sensor give good precision and accuracy.

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