Review Paper On Color Tracking Mechanism for Robotic System

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Abstract—In this review paper, We have presented comparative study of various color tracking techniques for embedded system. Many techniques have been proposed for color tracking object. We have compared various priors and discussed various color tracking technique. Color tracking is most important part in the field of computer vision. Detection and tracking of moving object in the video scenes is the first relevant step in the information extraction in many computer vision applications. The overall objectives of this review are to evaluate techniques for color tracking object and other popular techniques for efficiency.
Keywords— color tracking, Object detection, Object tracking, etc

I. INTRODUCTION

Video processing has an insatiable demand for real-time performance.Smart cameras leverage very large-scale integration to meet this need in a low-cost, low-power system with substantial memory. Moving well beyond pixel processing and compression, these VLSI systems run a wide range of algorithms to extract meaning from streaming video.The ARM7 processor family has been immensely successful, and has helped establish ARM as the architecture of choice in the digital world.While the ARMV7 processor family continuous to be used for simple 32-bit devices ARM,originally Acorn RISC Machine,later Advanced RISC Machine, is a family of reduced instruction set computing (RISC) architectures for computer processor,configured for various environments.The architecture of choice in the digital world. Over the years, While the ARM7 processor family continues to be used today for simple 32-bit devices ARM, originally Acorn RISC Machine, later Advanced RISC Machine, is a family of reduced instruction set computing (RISC) architectures for computer processors, configured for various environments. Since the Raspberry Pi was released in 2012, there have been several versions of the mini PC board released. The baby of the family is the Model A; it was released as a lower-cost version of the Model B, shown in the following section. Its main differences from the Model B are that it features just 256Mb of memory and has no Ethernet port; so if you want to connect this board to a network, you are limited to using a USB Wi-Fi dongle. This was the first version of Raspberry Pi to be released; an updated revision, which improved the power system and USB port protection, came later. It features 512Mb of memory ahas an Ethernet port for connecting to your network. This is probably the most common version used, and having the Ethernet port is incredibly useful, especially to get up and run quickly in order to set up and configure your Pi without the need for a keyboard and monitor.

Fig.1 Raspberry Pi Model A

Fig.2 Raspberry pi Model B

Fig. 3 Raspberry pi Model B+

Fig.4 Raspberry Pi Model 2

memory and has an Ethernet port for connecting to your network. This is probably the most common version used, and having the Ethernet port is incredibly useful, especially to get up and run quickly in order to set up and configure your Pi without the need for a keyboard and monitor. the Raspberry Pi Model 2. It's similar to the Model B+ in terms of form-factor and interfaces, but is now reportedly 6-times faster than the Model B/B+ with its upgraded ARM processor and 1Gb of memory. At the same low cost of less than £30, it's a fantastic little board and a great power-house for embedded system.

II. RELATIVE STUDY OF EXISTING METHOD

Object detection for service robot using range and color of an image is presented by Dipankar Das. The real-world applications, service robots. The objective of this paper is to detect and localize multiple objects within an image using both range and color features. The proposed method uses 3D shape features to generate promising hypotheses within range images.

The vision based object tracking by mobile robot is presented by P.K.Das, S.C.Mandhata, C.N.Panda,S.N

Patdro. In this paper the vision based color tracking by khepera 2 mobile robot. The object tracking is realized by color segmentation through image threshold. The wireless camera mounted on the robot will capture the image in front of its viewing range and based on the color property of the target object, the control in tracking is activated automatically by seeking the control align in the direction of the tracked object.

Object tracking robot by using raspberry pi with open computer vision is presented by M.Karthikeyan, M.Kudalingam,P.Natrajan and A.MadhanPrabhu .This idea is used for surveillance purpose, monitor the army base, traffic monitoring and human machine interaction. In this paper robots can detect the object and rotate as left and right position and then move forward and backwards depends upon the object movement..

Color based object tracking and following for mobile service robot is presented by MohamedAbdellatif. A vision based measurement and control system is developed to enable a mobile robot to track and follow an object moving on an indoor flat terrain.The algorithms for color image processing and target extraction and measurement of target features have been developed. A fuzzy logic controller had been used for controlling the steering The robot reliably followed the target in our experiments and kept a distance between them that ensures the visibility of the target in the camera. Furtherimprovements will be made in the future to reach more complicated behaviors.

Color Tracking Robot is presented by DewitBekele,HanLiang,AlisonLeonard,EdwardMung.Vision with color tracking is concerned with color data only.The robot is move to the left when color is concentrated in the left half of the screen and moves to the right when color is concentrated on right.

III. METHODOLOGY

The proposed system will have camera mounted robot with ARMV7 platform. With help of camera images will be captured. The captured images will be processed to identify predefined colors object. Till the color is detected the robot will be searching the color by moving around it.The algorithm written on ARMV7 platform will control robot motors and camera mount to identify the same, once the color detected robot will be tracking the color by control of motor. This method is used for tracking the object which have different sizes and different colors.
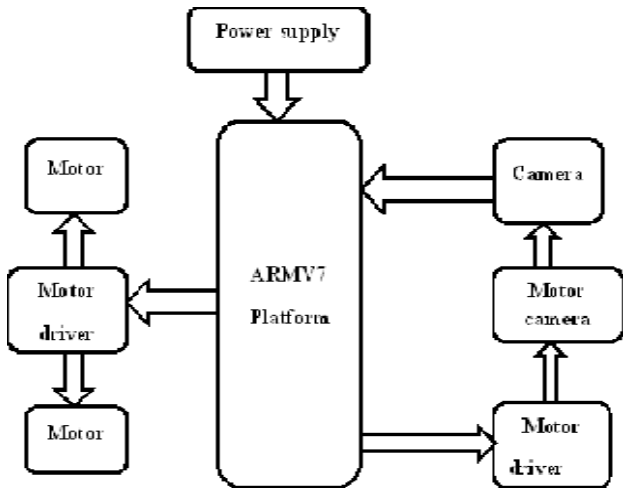

Fig.5 Block Diagram Of Color Tracking Robot

V. CONCLUSIONS

In this paper we have discussed different method for tracking the color objects. We have categorized and tracking is simple and effective method. It can give faster results other then technique.

REFERENCES

[1] DhanojM Reshma K.V Marymol,"Color Sensor Based Object Sorting robot Using Embedded System", International Journal of Advanced Research in Computer and Communication Engineering.
[2] DipankarDas,"Object Detection For Service Robot Using Range And Color Features Of An Image". International Journal of Computer Science, Engineering and Applications (IJCSEA) Vol.4, No.3, June 2014.
[3] P.K.Das,S.C.Mandhata ,C.N.Panda,S.NPatdro."Vision Based Object Tracking By Mobile Robot".International Journal of Computer Applications .
[4] M.Karthikeyan,M.Kudalingam,P.Natrajan and A.MadhanPrabhu ."Object Tracking Robot By Using Raspberry PI With Open Computer Vision (CV)".International Journal of Trend in Research and Development, Volume 3(3), ISSN: 2394-9333 www.ijtrd.com IJTRD | May - Jun 2016 Available Online@www.ijtrd.com 31.
[5]MohamedAbdellatif." Color-Based Object Tracking and Following For Mobile Service Robots" International Journal of Innovative Research in Science, Engineering and Technology
[6] DewitBekele,HanLiang,AlisonLeonard,EdwardMung."Color Tracking Robot".