TRACKING LOCATION OF MEDICINAL PLANTS IN DENSE FOREST USING IMAGE PROCESSING: A COMPARATIVE ANALYSIS

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Abstract—This paper proposes a methodology for locating medicinal plants in dense forest or places where human cannot go in search for it. Medicinal plants have a promising future because there are about half million plants around the world, and most of their medical activities have not yet investigated, and their medical activities could be helpful in the treatment of present or future studies. Hence it is Important to be able to locate them in the dense forests

Index Terms—image processing, coordinates.

I. INTRODUCTION

[1] Natural medicine has for ages been acknowledged as one of many earliest kinds of solutions employed by people. Many people in establishing countries however count on traditional healing techniques and medicinal plants because of their day-to-day healthcare needs, in spite of the improvement in contemporary medicine[2].Medicinal plants have played an important role of primary health care system among the people .Most of the people dependents on traditional medicinal practices to cure human and other animal diseases. Since ancient times, in search for rescue for their disease, the people looked for drugs in nature. The use of plant, plant extract or chemical derived from plants to treat disease is therapeutic modalities .It has reported that more than 75 pure compounds derived from higher plants are used in herbal medicine but most of those applied in modern medicine are now produced synthetically. Like every single living individual from the biosphere, medicinal and aromatic plants are not safe to the impacts of environmental change. The destruction and deterioration of organic habitats of medicinal crops have led to declined supply of these valuable natural materials. Forests of Kerala are endowed with a sizable quantity of medicinal plants. An authentic book with this essential element of forest methods is still missing and thus almost no information can be acquired on the medicinal qualities of many species. A list of the medicinal plants of Kerala forests is prepared, The habitat and subject were studied and these information were also noted[3]. The species are arranged in respective plant families. This project helps in finding the medicinal plants which is present in the forest with the help of image processing and thus helps people to reduce their difficulty in finding them.

II. LITERATURE REVIEW

Jiude Li[4] proposed that tracking of vehicles from video obtained from the cameras placed on roads can be done taking into account enhanced camshaft algorithm. Initially, some basic image noise reduction algorithms are used.Mean-shift algorithm flow chart:

1. Form the motion model of target. First, select the target window in the first frame and determine the initial searching position. And then, calculate the histogram of the image in searching window, after which the modeling of target motion is completed.
2. Form the motion model of target to be selected. In this step, obtain the model to be selected in the region that the target may lie in by particle filter from the video image sequence.
3. Calculate the Mean-shift of target. Compare the similar degree between motion model in initial frame and motion model in current model using the likelihood function. The principle of calculating the Mean-shift is make the likelihood function maximum (Bhattacharyya coefficient is adopted in this paper), by which the vector obtained is the one from initial position to current position.
4. Similar degree threshold judgment. If the similar degree above is smaller than the threshold stetted, turn to step 5, or else go to step 6.
5. Generate particles randomly using particle filtering and calculate the weight of each particle. And then update particles to calculate the average estimation of target dynamic state.
6. Make the current tracking window as the target region in the next frame image and return to step 2 [11] CamShift algorithm is broadly used for tracking methodology for the situation where no suppositions have been made about the objective to be tracked.

Kamaljit Kaur and Dr. Rinkesh Mittal[5] presenteda survey report on vehicle tracking where the vehicle could be recognized from the separation or remote area as the number plate must be extricated once the camera is focused on it. In any case, at first sight, an object is distinguished by its appearance i.e. its shape, model, shading or style of the body. So at first sight, its information as far as its body or appearance is an essential wellspring of data that must be recovered or removed structure it's picture. The goal is to separate the object data taking into account its appearance that is shading, shape, display, any identifiable imprint or whatever other wellspring of data that is obviously accessible on the vehicle.The work is divided into following steps: Image Acquisition of object Segmentation of object among other objects Image Enhancement and binarization Extraction of object shape, size and other dimensional features Normalization of features Object data storage for its identification

In this paper[6] it is based on Real-Time Compressive Tracking algorithm to naturally decide the location of dairy and beef cows from multiple video cameras in the pen. A few enhancements are acquainted with enhance algorithm accuracy. They likewise progressively weight the

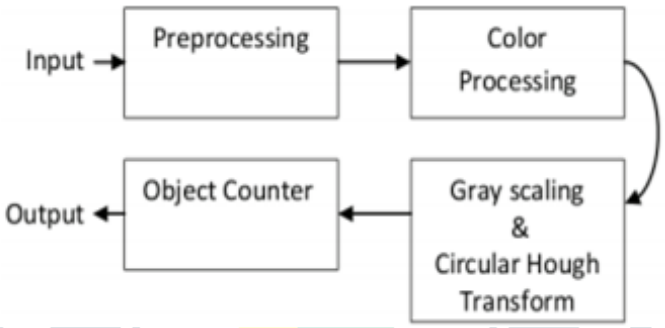
location estimates from multiple cameras using boosting to avoid errors introduced by occlusion and by the tracked animal moving in and out of the field of view. The RTCT algorithm has been assessed in various application situations. In most cases, RTCT outperforms alternative leading trackers including fragment, multiple instance learning, semi-supervised tracker, online AdaBoost, tracker, TLD tracker and the Struck method. Here, according to the circumstance where n cameras being utilized to track a chosen cow, the video contribution from every camera is handled by an individual case of RTCT. A simple cow-detector has also been implemented and added to the original RTCT schedule. This roboticized the already manual initialization venture of RTCT and, when utilized amid following, makes the technique more powerful. On a fundamental level, the more cameras utilized as a part of the proposed plan, the more precise the following execution. For assessment, 570s of footage from two cameras was utilized. The proposed methodology was appeared to effectively track the cow all through the test succession and could manage the complexities presented when a bovine leaves and later re-enters the scene. At last, the cow location estimates were processed to allow the traversed distance to be estimated and to help identify when the cow is moving or staying still. This forms the basis for extension into a number of applications to aid cow welfare optimization and automatic annotation for cow surveillance.

In this paper [7]it examines about the strategy or strategies on the most proficient method to identify the mango from a mango tree which can be similar to identifying the input image of plant given. The procedures utilizing are, for example, color processing which are used as primary filtering to eliminate the unrelated color or object in the image. Other than that, shape discovery is been utilized where it will utilize the edge recognition, Circular Hough Transform (CHT). This system will decide the applicants of mango and find the circular pattern with the given radius within an image by collecting the maximum voting. The program should automatically detect the desire object and check the aggregate number of it.

Steps:

1) Prepare color images of mango.
2) Image RGB adjustment.
3) Detect the color of each pixel and determine whether mango color or background which is unrelated to the object color is.
4) Delete the unrelated region by replacing the color with all black color.

Here, shape detection process is used to detect the shape instead of using color detection



A. Color Processing
B. Circular Hough Transform (CHT)

These processes are done in order to get the required result.

Rajwant kaur, Sukhpreet kaur [8]a calculation with morphological opening in combination with direct channels, for example, wiener filters and after that evacuate the non-uniform background light by utilizing morphological opening of the picture with this organizing component can be done. Background guess have been taken as the criteria to decide the closeness to the non-uniform background extraction utilizing different methods, for example, wiener Filtering and our new procedure in light of morphological procedures and progressive widening and disintegration took after by difference upgrade for the exact molecule extraction for parallel picture handling in connection with wiener channel and thresholding toward the end to enhance the picture contrast. It has been inferred that because of non-uniform foundation enlightenment, a large portion of the particles give off an impression of being either dull or light in a picture and utilizing methods, for example, division, edge location and general picture preparing calculations taking into account "area of interest" couldn't separate between a portion of the particles and their experience or neighboring pixels. In future, it is plan to perform the simulations and analysis of an image and its enhancement to correct for non-uniform illumination, then use the enhanced image to identify discrete objects/particles present in the image.The techniques used in this is: Histogram equalization and contrast enhancement edge detection and boundary extraction

morphology

Y.Ramadevi[9]the association between image segmentation (using different edge detection methods) and object recognition are discussed. Edge location techniques, for example, Sobel, Prewitt, Roberts, Canny, Laplacian of Gaussian(LoG) are utilized for sectioning the picture. Desire Maximization (EM) algorithm, OSTU and Genetic calculations were utilized to exhibit demonstrate the synergy between the segmented images and object recognition. Execution of the strategies was done on various pictures. Colored images were converted into gray scale image and then segmentation and recognition methods were applied. A specimen dark scale picture is considered for division and item acknowledgment utilizing Sobel, Prewitt, Roberts, Canny, LoG, EM calculation, OSTU calculation and Genetic Algorithm.

Reza Oji[10]proposeda flawless technique for item acknowledgment with full limit identification by joining relative scale invariant component change (ASIFT) and an area consolidating calculation was studied here. ASIFT is a completely relative invariant calculation that implies elements are invariant to six relative parameters specifically interpretation (2 parameters), zoom, pivot and two camera hub introductions. The elements are extremely dependable and give us solid key points that can be utilized for coordinating between various pictures of an article. Here an item is prepared in a few pictures with various perspectives for discovering best key points of it. At that point, a vigorous area combining

calculation is utilized to perceive and distinguish the article with full limit in alternate pictures taking into account ASIFT keypoints and a likeness measure for consolidating areas in the picture. Test comes about demonstrate that the introduced technique is exceptionally productive and effective to perceive the item and recognize it with high exactness. These objectives are accomplished by consolidating ASIFT and a locale combining division calculation in view of a likeness measure. Distinctive protests are prepared separately in a few pictures with various perspectives and camera perspectives to locate the best key points for remembering them in alternate pictures. These key points will be connected to the area blending calculation. The consolidating procedure is begun by utilizing key points and displayed similitude measure (Euclidean separation). The districts will be combined in light of the consolidating part and Finally, the item will be recognized well, with its limit. A last conclusion is that the more key points are acquired, and the more precise they are, the outcomes will be better and more adequate. As of now, they are attempting to build up a methodology for shape acknowledgment of articles in images. They want to introduce a strong calculation for shape acknowledgment by utilizing the separated limits of items in view of the proposed calculation in this paper.[10]In this paper indoor limitation assumes a critical part for some applications particularly apply autonomy where the area of robot is important for the undertakings of following and controlling. Among endeavors proposed to address this issue, odometry-based restriction is exhibited as a successful strategy with straightforward establishment. This methodology depends on the development data of the robot wheels that are acquired by movement sensors to gauge position changes of robots. Nonetheless, the mistakes of assessing the postures of robot by odometry are gathered and expands additional time because of the wheel sliding, sensor blunders, or mistaken data of wheelchair setup. This paper displays a way to deal with beat these disadvantages through the tuning procedure utilizing a profundity camera. A randomized wood is prepared to guide profundity pictures caught by a profundity camera to named areas. As an arrangement, this data is utilized to refine the consequences of odometry-based limitation. Analyses are directed with a genuine electronic wheelchair to demonstrate that the proposed approach builds the exactness of the customary odometry-based strategies. Consequently, the methodology is pertinent for some applications identified with indoor limitation.

Zhenhai Wang[13]proposed that object tracking can be done based on spatial context also. Here it proposes an enhanced item following strategy in light of spatial setting of picture to enhance the precision and ongoing of article following. Initially, the picture is arbitrarily tested around focus at current casing. Contrast every specimen and format picture utilizing the portion strategy as a part of Fourier space with the goal that the area of the most extreme reaction can be acquired. At that point, in this position, the pixel comparability is summed by the weighted Gauss capacity inside 10*10 sub-window, and the area of the greatest likeness in all inspecting sees as the best following position. The exploratory results show that the following pace is clearly enhanced in light of the fact that Fast Fourier Transform(FFT) is embraced in calculation. Following calculation keeps running at around 100 edges for every second on i5 machine. Tracker exactness comes to around 90% at a limit of 50. Broad trial comes about demonstrate that the proposed calculation outflanks positively against condition of-workmanship following techniques taking into account portion strategy in numerous perplexing conditions.

III. CONCLUSION

Different techniques for location tracking using image processing have been discussed.Real-Time Compressive Tracking algorithm and algorithm are used for location tracking.Zhenhai Wang[13]et al's method says that object tracking can be done based on spatial context also. These methods can be further modified for tracking the location of medicinal plants.

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