



## Flower Detection in Digital Image Processing using Global Image Enhancement Method

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### Abstract:

Flowers play an important role on the planet as they contain the reproduction part of plants. The only flower parts of plants have ability to produce different kinds of fruit, vegetable, and seeds for humans. Flower seeds also are used to produce oil. Honey bees collect nectar from flowers to produce honey. In this paper a new approach is proposed for flower detection. The proposed algorithm is use Global image enhancement and thresholding technique for flower detection in digital images.

**Keywords:** Image Processing, flower detection, leaf detection, methodologies, flower segmentation.

### I. INTRODUCTION

There are 250,000 different kinds of blossom species, consistently we can see numerous blossoming blooms in the roadside, plant, stop, mountain way, wild field, greenhouses and so forth [1]. Presently a day the utilization of innovation in the field of horticulture is expanding step by step for diminishing the labor and expanding the creation limit. By and large the blossoms generation is taken in nurseries what's more, fields for the income reason by agriculturists. Delivered blossoms sold in showcase by the agriculturists as group[2]. Be that as it may, in the market these blooms sold as units; consequently the benefit pick up by the operator is more than the agriculturist; since a rancher doesn't know what number of (in units) blooms are there in his nursery. So to defeat this issue, picture preparing application can be utilized to consequently identify and check the number of blooms accessible in the nursery.

This paper gives a novel way to deal with naturally recognize and include the number of blooms a picture of nursery caught by computerized cameras. The computerized picture of blooms in nursery can be taken by either high determination advanced cell or computerized cameras. This information blossom picture is pre-prepared utilizing

Gaussian low-pass channel and morphological activities for clamor expulsion and picture improvement. The worldwide thresholding approach is utilized for area division of individual bloom and includes the number of blossoms a given info picture.

This work proposed Flower Identification System (FIS) that assistance perceiving a blossom picture with a specific end goal to get additional data about their species. The framework utilizes picture grouping in view of existing database[3]. The client will have the capacity to infer imperative data identified with the information blossom picture, for example, bloom's logical name, plant data et cetera. The data gave would then be able to be utilized The only additional data gathering exercises[4].

### 2. RELATED WORK

As of late the flower recognition framework in light of picture preparing was proposed in [5]. The author utilized the edge and shading qualities of blossom pictures to characterize the blossoms and conveyed Hu's-sevenmoment he calculation to obtain edge attributes. The closest neighbor is utilized to characterize the blossoms. The proposed framework draws a fitting bouncing window that contains the intrigued

bloom area, contingent upon that the limit the following technique is produced to remove bloom districts as precisely as could reasonably be expected [6].

In [7], proposed another approach for ordering a specific DB (database) by using the shading and spatial space information accessible for the DB; and given the answer for the issue of ordering pictures of blossoms. In [8], utilized a novel strategy to detach the blossom area from the foundation utilizing thresholding on lab shading space for sectioning blossom district. Thresholding was performed, independently, on the three-part L, an and b, and the best outcome is chosen.

In [9], use the Diagram cut strategy which gives the procedure to recognize certain pixels as foundation or question as section part utilizing contrast subordinate earlier Markov random field (MRF) cost work.

In [10,11], proposed a strategy for distinguishing proof of return on initial capital investment utilizing the edges in the pictures depends on the common vulnerability rule. Creator utilized C-Means calculation dodge vagueness to choose the bloom to compose to arrange the blooms as blossoms with numerous petals, blossoms with clear one petal and adjusted blooms.

### 3. METHODOLOGY

The steps of proposed method are shown in figure 1. the figure shows that at the first step algorithm read an RGB image then enhance and perform Preprocessing after that the proposed method converts into segment and then final results are found



Figure 1: proposed method

#### A. Image Acquisition

The bloom picture from a nursery is caught from top side of blooms in nurseries with one to two meters remove utilizing Sony Digital shot W810 20. IMP camera in cloudy condition. The caught picture of marigold blossom is in estimate 1200X1600 out of a jpeg organize. The Acquire image is shown in figure 2.



Figure.2 : Original Image

#### B. Global Image Enhancement

For the global image enhance histogram equalization method is used. The results of histogram equalization are shown in figure 3.



Figure 3: Global Image Enhancement

#### C. Preprocessing

For the preprocessing of digital image the algorithm perform following tasks:

Remove noise

Resize

In the Proposed method, the Gaussian low-pass channel is utilized with the predefined estimate what's more, standard deviation. Info picture is changed over into twofold shape in view of the thresholding level. The Otsu's technique is utilized to pick the limit to limit the intra-class fluctuation of the high contrast pixels.

### C. Image Segmentation

The canny technique is utilized to discover the locales of the blossoms in a picture, in light of the fact that in the paired picture white pixels show the zone of the blossoms. After that, the cover is made relying upon the edge and put that veil on original picture.

P2 = Image

$$e = \text{Edge} \quad (1)$$

$$P3 = P + N \quad (2)$$

Where,

N = mask of color edges.

P3 = Image segmentation.

GrabCut, a semi-automatic image segmentation algorithm developed based on a graph-cut approach was used in the image segmentation stage. The rectangle region is used as an initial rough segmentation. The algorithm took into account color distribution information inside a rectangular and iteratively segment foreground and background without having difficult user interaction. the border matting and alpha-matte is used to estimate object boundary and the colors of pixels.

### D. Results

After applying the edge detection the following result of flower detection is shown in figure 4.

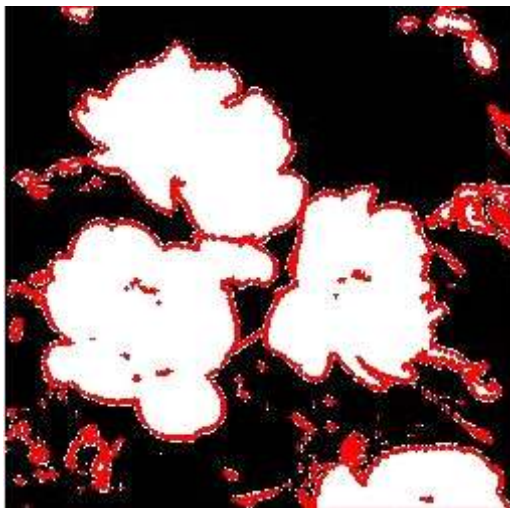


Fig. 4 : Resulted image

### VI. CONCLUSION

As the flower is an important part of the universe. They play an important role in human life as they get many foods form them. This article presented a global image enhancement technique flower from digital image. This paper can make great contribution to the building of different kinds of AI applications like plant disease detection and many others.

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