

COMPARISION OF IMAGES BY USING TWO DIFFERENT SEGMENTATION METHOD

P. Chandanakala¹, Kadiri Kishore², Parvathala Joshita², Jyotsna K S², Modem Chevitolla Lokesh², G Kavitha²

¹Assistant Professor, Electronics and Communication Engineering, Siddharth Institute of Engineering & Technology, Puttur, India.

²UG Scholar, Electronics and Communication Engineering, Siddharth Institute of Engineering & Technology, Puttur, India.

ABSTRACT

Image processing is a technique which is used to extract the information from the image so or pictures. For this the division handle cab be utilized to extricate the ROI (Locale Of Intrigued) from the picture. There are distinctive sorts of division strategies. More excessively this computer vision is captivating (curiously) field. There are two fundamental methods utilized in computer vision for highlight extraction. Dynamic form and edge discovery procedures. Dynamic form characterizes a isolated boundary or ebb and flow for the districts of target question for division. The form depends on different edge location is a method utilized to distinguish the edges found in an picture. We can characterize an edge to be a alter in pixel or picture intensity. Here we consider these two strategies for our perceptions. We utilize canny and Sobel edge discovery calculations. By utilize of their PSNR(Peak Flag To Clamor Proportion) we select best strategy for our prerequisite. This Picture preparing field empowers the handle of visual data for understanding complex errands like protest location, picture acknowledgment etc.

KEY WORDS

Active contour method, Edge detection, Canny and sobel edge detection algorithms, PSNR, Feature extraction.

INTRODUCTION

Digital Image Processing is the utilize of calculations and numerical models to prepare and analyze computerized pictures. Picture handling is a procedure which is utilized to determine data from the pictures. Division is a segment of picture handling for the partition or isolation of data from the required target locale of the picture. There are distinctive procedures utilized for division of pixels of intrigued from the picture. The objective of computerized picture handling is to upgrade the quality of pictures, extricate important data from pictures, and computerize image-based assignments. An picture is a two-dimensional work. $f(x, y)$, where x and y are spatial (plane) facilitates, and the plentifulness off at any combine of arranges (x, y) is called the concentrated or gray level of the picture at the point. when x, y and the escalated values of f are all limited, discrete amounts, we call the picture a advanced picture. Advanced Picture is composed of a limited number of components, each of which components have a specific esteem at a specific area. These components are alluded to as pixels. A Pixel is utilized to signify the components of a Advanced Picture. Picture division includes breaking down a advanced picture into different

subgroups called picture sections that diminishes the complexity of the picture. to make preparing or investigation of the picture less difficult. Two primary strategies utilized in computer vision for include extraction are edge discovery and form location.

Two main techniques used in computer vision for feature extraction are edge detection and contour detection

Contour detection:

Active Contour a isolated boundary or ebb and flow for the districts of target question for division. The form depends on different vitality imperatives and powers in the picture for division of locale of intrigued. Forms are boundaries planned for the region of intrigued required in an picture. Form is a collection of focuses that experiences insertion prepare. The insertion prepare can be straight, splines and polynomial which portrays the bend in the picture. Dynamic forms are utilized in division of locales from distinctive restorative pictures such as brain CT pictures, MRI pictures of diverse organs, cardiac pictures and distinctive pictures of locales in the human body. Dynamic forms can too be utilized in movement following and stereo following. Hence, the dynamic form division is utilized for the partition of pixels of intrigued for diverse picture preparing.

Edge detection:

Edge Detection is a method utilized to recognize the edges found in an picture. We can characterize an edge to be a alter in pixel or picture concentrated. The Sobel administrator is a well-known calculation for edge discovery utilized to recognize and highlight the boundaries inside an picture. It gauges the changes in the concentrated levels of an picture. It's like a device that makes a difference us see where colours in a picture move abruptly or tenderly, indicating at the edges or boundaries inside the picture. The Canny edge discovery

calculation is a multistage the Matlab can be utilized to handling of these strategies The most common application that we watch nearly each day are bar code scanners, selfie(face magnificence, obscuring the foundation, confront location), picture upgrade, etc. The advanced picture preparing moreover plays very an vital part in transmitting information from distant off satellites and accepting and interpreting it in the same way The computerized picture handling too plays very an vital part in transmitting information from distant off satellites and getting and interpreting it in the same way. For case, The most common application that we watch nearly each day are bar code scanners, selfie (confront magnificence, obscuring the foundation, confront location), picture upgrade, etc.

Here the Matlab can be used to processing of these methods The most common application that we observe almost every day are bar code scanners, selfie(face beauty, blurring the background, face detection), image enhancement, etc. The digital image processing also plays quite an important role in transmitting data from far off satellites and receiving and decoding it in the same way The digital image processing also plays quite an important role in transmitting data from far off satellites and receiving and decoding it in the same way. For example, The most common application that we observe almost every day are bar code scanners, selfie (face beauty, blurring the background, face detection), image enhancement, etc.

1. Matlab provides all the algorithms for image processing.
2. After we compare these methods.

EXISTING SYSTEM

In earlier days Image Segmentation is done using Active Contour Segementation method. It is a very lengthy process. After that to

overcome this problem many other methods were introduced like Edge Detection method etc. Till now projects are done by using different types of active contour methods for single image.

PROPOSED SYSTEM

Image Segmentation is a key innovation in the field of computer picture processing. Among them, segmentation strategies based on dynamic form models have been created quickly in later a long time due to their successful preparing of complex pictures such as restorative pictures. These strategies have accomplished noteworthy comes about in therapeutic, military, and mechanical fields. Now we are comparing diverse division strategies for single Image.

Active Contour Method: Uses deformable models to extract regions of interest. Provides input for the segmentation process.

Image Segmentation: Partitions the image into meaningful segments. Identifies regions based on the active contour output.

Edge Detection Method: Applies edge detection algorithms. Identifies boundaries within the segmented image.

The Process of Segmentation: Iteratively refines the segmentation. Improves the accuracy of the final image partitioning.

METHODOLOGY

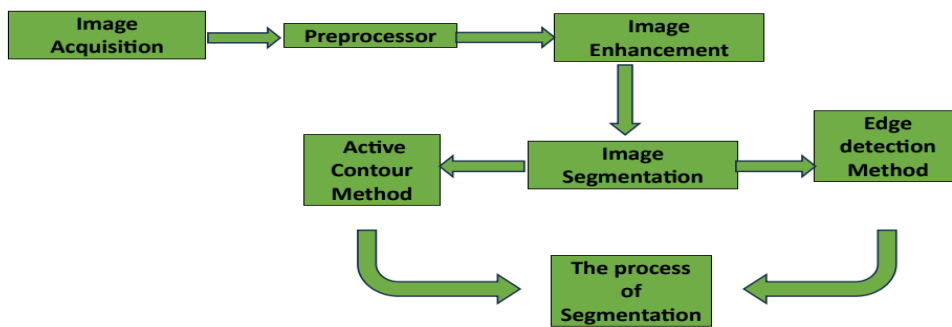


Image Acquisition: Captures the input image data. Provides the raw image for further processing.

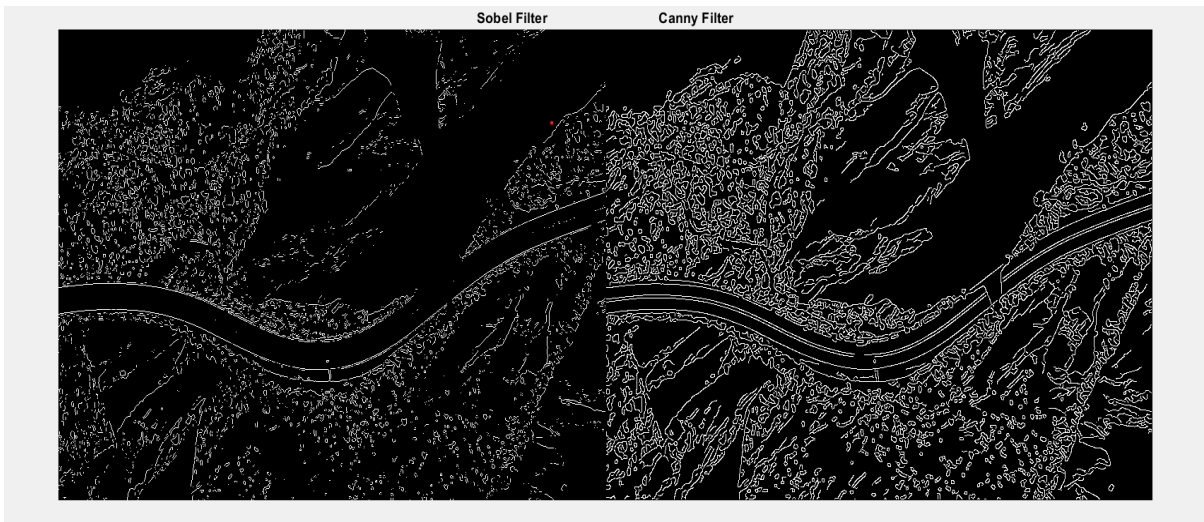
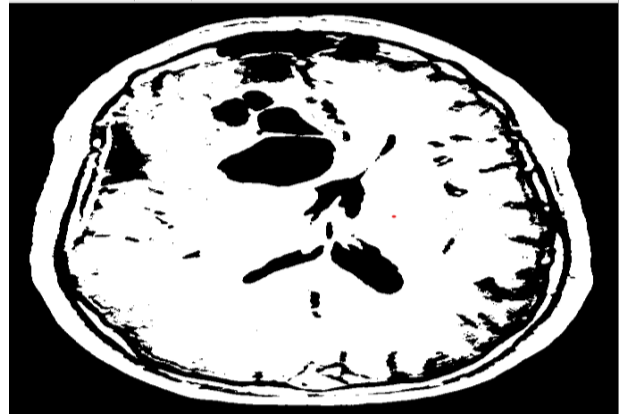
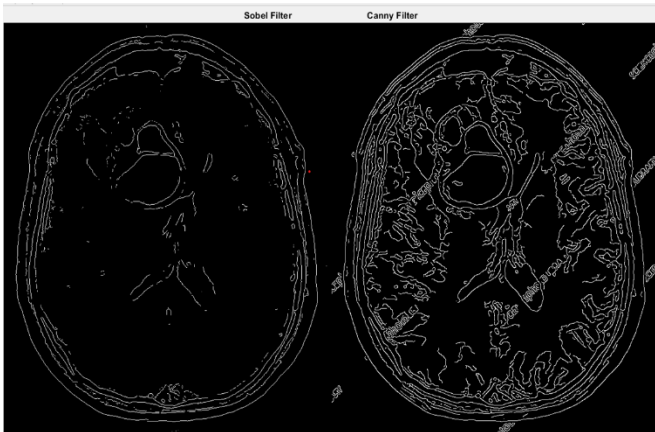
Preprocessor: Applies initial transformations to the image. Improves image quality and prepares it for enhancement.

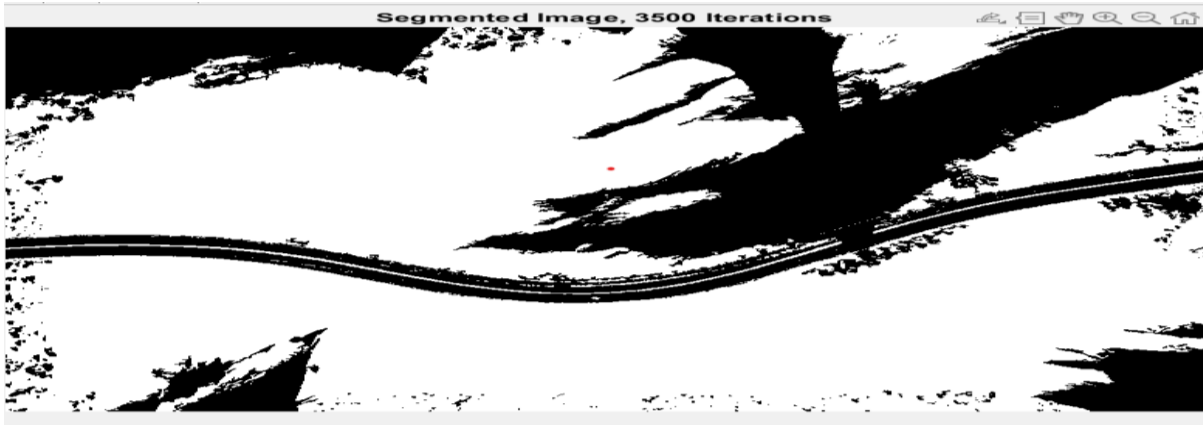
Image Enhancement: Applies techniques to highlight important image features. Facilitates subsequent segmentation.

SOFTWARE STIMULANTS

- MATLAB R2023b

RESULTS





CONCLUSION

In this project we are comparing two segmentation methods i.e , Active Contour Method and Edge Detection Method. By doing this project we conclude that Edge Detection Method is more suitable for segmenting images than Active Contour Method. Because Edge Detection Method is more accurate, takes less time for processing, easy to perform.

REFERENCES

- S. P. Khadilkar, S. R. Das, and M. H. Assaf, “Face identification based on discrete wavelet transform and neural networks,”
- V. Singh and A. K. Misra, “Detection of plant leaf diseases using image segmentation and soft computing techniques,”
- A. R. Raju, S. Pabboju, and R. R. Rao, “Hybrid active contour model and deep belief network-based approach for brain tumor segmentation and classification,”
- Y. Wu, X. Liu, D. Zhou, and Y. Liu, “Adaptive active contour model driven by image data field for image segmentation with flexible initialization,”
- R. Jin and G. Weng, “A robust active contour model driven by pre-fitting bias correction and optimized fuzzy c-means algorithm for fast image segmentation,”
- G. Wang, J. Lu, Z. Pan, and Q. Miao, “Color texture segmentation based on active contour model with multichannel nonlocal and tikhonov regularization,”
- S. Bargoti and J. P. Underwood, “Image segmentation for fruit detection and yield estimation in apple orchards,”
- S. Hartati, D. Safitri, and A. Marini, “Talent development & excellence bullying behavior in early childhood: Study at early childhood education institution in East Jakarta in Indonesia,”
- W. Zhou, Y. Yi, Y. Gao, and J. Dai, “Optic disc and cup segmentation in retinal images for glaucoma diagnosis by locally statistical active contour model with structure prior,”
- C. E. Thomas, G. Abbott, P. B. Gastin, and L. C. Main, “Construct validity and reliability of the talent development environment questionnaire in caribbean youth track and field athletes,”