



Scienxt Journal of Electrical & Electronics Communication  
Volume-2 || Issue-2 || Jan-Apr || Year-2024 || pp. 1-16

## *Image segmentation watershed process based on progressive median filtering & gradient map*

**Vinay Gupta, Nikhlesh Sharma**

Bit College Bhopal, M.tech

*\*Corresponding Author: Vinay Gupta  
Email: vinaygupta.jnct@gmail.com*

## **Abstract:**

In this paper, we present a digital image segmentation algorithm that is effective and offers robustness while minimizing the over segmentation issues. Image segmentation is a classic subject in the field of image processing and also is a hotspot and focus of image processing techniques. With the improvement of computer processing capabilities and the increased application of color image, the color image segmentation are more and more concerned by the researchers. In this paper we have proposed one new approach for Image segmentation. The proposed algorithm is designed to use the combination of Median-filtering, soft thresholding and watershed segmentation method, and sobel gradient map was used to perform image segmentation and edge detection tasks. In brief, median filter is performed on the image to limit the problem of undesirable over-segmentation results produced by the watershed algorithm. Soft thresholding is carried based on the region's maximum value to obtain binary segments of various classes to boost the watershed algorithm performance. The gradient map is created based on the edge strength of the image using sobel operators. The Algorithm is implemented over MATLAB 7.9.0, the result has been found better when compared to previous approaches.

## **Keyword:**

Digital Image Processing Image segmentation, Watershed algorithm, media filter, sobel operator, morphological operatio.