Abstract

This paper presents a method for blood vessel detection in digital retinal images. The method uses fuzzy logic approach with block wise gridding. It uses an adaptive approach for vessel detection. The segmentation is produced by classifying each pixel of the image as vessel or nonvessel. The performance of the proposed methodology is evaluated on the publicly available DRIVE database. It also contains manually labeled images by experts. Performance of this method on set of test images shows significant improvement than other solutions present in the literature. The method proves especially accurate results for vessel detection in DRIVE images. The method is simple and has fast implementation. It shows effectiveness and robustness with different image conditions. The vessel detection performance has a sensitivity of 0.8653 with specificity 0.9833. The accuracy of the method is 0.9728 for Drive database. This blood vessel detection and segmentation technique can play a useful clinical role in an automated retinopathy analysis system.

References

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**Index Terms**

Computer Science

Pattern Recognition
Keywords
Diabetic retinopathy  block wise gridding  retinal image  vessels segmentation