Abstract

One of the greatest concern and immediate challenges to the current health care is the severe progression of diabetes. Diabetic retinopathy is an eye disease that associated with long-standing diabetes. The conventional method followed by ophthalmologists is the regular supervision of the retina. As this method takes time and energy of the ophthalmologists, a new feature based automated technique for classification and detection of exudates in color fundus image is proposed in this paper. This method reduces the professionals’ work to examine on every fundus image rather than only on abnormal image. The exudates are separated from the fundus image by thresholding and removal of optic disk using morphological operation and connected component analysis. Finally, an automated Fuzzy Inference System (FIS) is used for classifying the retinal images as exudates and its severity and non-exudates. The sensitivity, specificity and accuracy are reported as 91.11%, 100% and 93.84% for Fuzzy Inference System Classification.

References

- Alireza Osareh, Bita Shadgar and Richard Markham, 2009 A


- Saiprasad ravikumar et al., 2007. Automated Feature Extraction For Early Detection Of Diabetic Retinopathy In Funds Image. IEEE international conference on Image Processing, pp 139-142.


- Sinthanayothin C, Boyce JF, Williamson TH, Cook HL, Mensah E, Lal S, Usher D.


Index Terms

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Keywords

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