Abstract

In this paper we have extracted the retinal blood vessels using 2D Matched filter. The proposed algorithm is consisting of some preprocessing steps on RGB image like extraction of green channel; contrast limited adaptive histogram equalization, and morphological opening operation. After extraction of retinal blood vessels using matched filter, we have calculated fractal dimension for finding the architectural distortion. Accuracy is calculated using person correlation coefficient, and achieved 98.3 % accuracy. Operations are done on the 45 images
of HRF database. 15 images are of Healthy, 15 images are of Diabetic retinopathy, and 15 are of Glaucoma.

References


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- Yogesh M. Rajput, Ramesh R. Manza, Manjiri B. Patwari, Neha Deshpande, "Retinal blood vessels extraction using 2D median filter," National Conference in Advances in computing (NCAC&amp;apos;13), 05-06 March2013.


Retinal Blood Vessels Extraction using Matched Filter on High Resolution Fundus Image Database

- (RGB Image) http://www.mathworks.in/help/matlab/creating_plots/image-types.html
- (Morphological opening) http://en.wikipedia.org/wiki/Opening_(morphology)
- (Fractal Dimension) http://fractalfoundation.org/OFC/OFC-10-5.html

Index Terms

Computer Science
Information Science

Keywords

Diabetic Retinopathy Retinal Blood Vessels Matched Filter Hrf Database