Abstract

The emerging situation in today’s world suggests diabetic retinopathy may be a major problem in the medical world. Diabetic retinopathy is dangerous because it cannot be identified in its earlier stages and leads to vision loss. Hence, detection of diabetic retinopathy in early stage is very much important. This paper focuses on Generalized Feed Forward Neural Network (GFFNN) to detect diabetic retinopathy in retinal images. In this paper the authors present the GFFNN as a classifier to classify retinal images as normal and abnormal. 64-point Discrete Cosine Transform (DCT) and 09 statistical parameters such as Entropy, Mean, Standard deviation, Average, Euler number, Contrast, Correlation, Energy and Homogeneity are extracted from fundus retinal images to form a feature vector. The feature vector is used to train and test the GFFNN. The training and cross validation recognition rate by the GFFNN are 100% and 95.45% respectively for detection of normal and abnormal retinal images.


Index Terms

Computer Science

Image Processing

Keywords

Generalized Feed Forward Neural Network (GFFNN), Discrete Cosine Transform (DCT), Fundus retinal images database DIARETDB0.