Abstract

Diabetic retinopathy (DR) is caused by damage the retina because fluid leaks from blood vessels into the retina. Damage the posterior part of the eye of the diabetic patient. This disease that occurs when does not secrete enough insulin or the body is unable to process it properly. The main two types of diabetic retinopathy the first are non-proliferate diabetes retinopathy (NPDR) and second are proliferate diabetes retinopathy (PDR). The increasing number of DR cases world-wide demands to the development of an automated detection system. We have proposed a computer based method for the detection of diabetic retinopathy using the fundus images. Using Image pre-processing, morphological processing techniques involves processing of fundus images for detect features, such as blood vessel area, exudates, microaneurysms, hemorrhages, and texture. Proposed techniques used for the extraction of these features from digital fundus images. The proposed techniques have been tested on the images of DIARETDB0 database. In which have total 130 images they all images are tested and it’s classified into microaneurysms, hemorrhages, and texture using Support Vector Machine (SVM)
for an automatic classification. The detection results obtained by comparing it with expert ophthalmologists. We demonstrated a classification sensitivity of 96.43%, specificity of 95.9% and accuracy of 99.27%.

References


Index Terms

Computer Science    Image Processing
Keywords

Diabetic Retinopathy, Fundus images, Microaneurysms, Exudates, Retinal blood vessels. Image morphology, artificial neural network.