Abstract

Diabetic Retinopathy is a major medical problem that causes damage to the eye. A need arises to detect it at an early stage. Since this ailment is symptomless, it can only be diagnosed by oculist. Currently, the trained eye care specialists are not able to screen the exponential increase in the number of Diabetic Retinopathy patients. An automated Diabetic Retinopathy screening system will enable the detection of lesions accurately, thus helping the ophthalmologists. Microaneurysms are the earliest clinical signs of Diabetic Retinopathy. They are reddish in color and appear as small red spots on the retinal fundus images. Early detection of microaneurysm can help in the early treatment of Diabetic Retinopathy. This paper presents the study and review of various techniques used in detection of microaneurysm from the diabetic retinopathy images. This paper is motivated by need of increasing sensitivity and reducing computational time for detection and classification of microaneurysm from the diabetic retinopathy images. Retina images are obtained from the fundus camera and graded by skilled professionals. However there is considerable shortage of expert observers has encouraged computer assisted monitoring. Evaluation of blood vessels network plays an important task in a
A Survey of Microaneurysms Detection using Segmentation Techniques in Fundus Images

variety of medical diagnosis. Manifestations of numerous vascular disorders, such as diabetic retinopathy, depend on detection of the blood vessels network. In this work the fundus RGB image is used for obtaining the traces of blood vessels and areas of blood vessels are used for detection of Diabetic Retinopathy (DR).

References


Index Terms

Computer Science

Image Processing

Keywords

Diabetic Retinopathy, Fundus image, Microaneurysm Detection, Retinal Image, Screening.