

AUTOMATED SYSTEM FOR DIABETIC RETINOPATHY DETECTION

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Diabetic Retinopathy is a disease of retina which affects patients with diabetes mellitus and it is a main reason for blindness. It is a disease in which the retinal blood vessels swell. This damages the retina of eye and may lead to blindness if the level of diabetes is very high. The most effective treatment is early detection through regular screenings. Automatic screening of these images would help the doctors to easily detect the patient's condition in more accurate way. In the first stage, illumination variation is addressed by normalizing the green channel of each color fundus image for luminosity and contrast variation. In the second stage, spatio-temporal retinal change locations are detected by a novel criterion, blobness measure, based on a multi-scale Laplacian of Gaussian. At the last stage, several local intensity and shape descriptors were extracted from each of the detected change locations and subsequently classified as a change due to a red retinal lesion or no change.