

# Diabetic Retinopathy Detection using Non-Mydriatic Fundus Images

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**Abstract:** *In recent years diabetic retinal disease, also known as Diabetic Retinopathy (DR), has become a new global challenge in the area of ophthalmology. It is the injury caused to the blood vessels in retina due to complications of diabetes mellitus, which can develop complete blindness if it progresses to proliferative level. Hence there is a need to detect this condition as early as possible, more specifically in rural areas where there are limited resources for timely screening. Fundus images, obtained from fundus camera, have gained interest in this background as they serve a key role in detection of DR with latest technological development in the thrust region of image processing. This paper is aimed to highlight the algorithm for detection of DR using fundus images which are pre-processed with the help of image processing techniques using Python which is a highlevel programming language. Also, some of the features necessary to detect the disease are extracted. The analysis gives the specificity and sensitivity of one method which tells the probability of classifying the severity of the disease in patients, helpful for the clinical experts in diagnosing of the disease.*

**Keywords:** Circular Hough Transform (CHT), diabetic retinopathy, fundus images, pre-processing, Support Vector Machine (SVM).

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