

LITERATURE-III

TEAM ID	PNT2022MID17456
PROJECT NAME	DEEP LEARNING FUNDUS IMAGE ANALYSIS FOR EARLY DETECTION OF DIABETIC RETINOPATHY
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PAPER –I

DEEP LEARNING FUNDUS IMAGE ANALYSIS FOR EARLY DETECTION OF DIABETIC RETINOPATHY

ABSTRACT :

Diabetes is a globally prevalent disease that can cause visible microvascular complications such as diabetic retinopathy and macular edema in the human eye retina, the images of which are today used for manual disease screening and diagnosis. This labor-intensive task could greatly benefit from automatic detection using deep learning technique. Here we present a deep learning system that identifies referable diabetic retinopathy comparably or better than presented in the previous studies, although we use only a small fraction of images ($<1/4$) in training but are aided with higher image resolutions.

ADVANTAGES

- Low risk of complications well-studied inexpensive.
- Efficacy well-established inexpensive.
- Decreased follow

DRAWBACKS :

- Intra-ocular administration has risk of end opnthalmitis
- No action the production of VEGF and retreatments and requirements
- Time requirements is reduced but not great extreme

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ABSTRACT :

This project presents a method to detect diabetic retinopathy on the fundus images by using deep learning neural network. Diabetic retinopathy is a retina disease caused by diabetes mellitus and it is a leading cause of blindness globally. Early detection and retreatment are necessary in order to delay or avoid vision deterioration and vision loss. To that end, many artificial intelligence-powered methods have been proposed by the research community for the detection and classification of diabetic retinopathy on fundus retina images. This review article provides a thorough analysis of the use of deep learning methods at the various steps of the diabetic retinopathy detection pipeline based on fundus images.

ADVANTAGES:

- Time consumption is reduced as it uses mathematical morphology techniques.
- The low contrast retinal image intensity is increased and a number of edge pixels were extracted.
- Slows the progression of diabetic retinopathy.

DRAWBACKS :

- Some errors ignored some types of errors on the border of the segment exudate in their reported performances.
- Time consumption is reduced but not to great extent.
- More time consuming.

ABSTRACT :

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Diabetic is largely asymptomatic in the early stages ,neural retinol damage and clinically invisible microvascular changes progress during these early stages. Thus, there is a need for irregular eye screening for patients with diabetes, as timely diagnosis and diagnosis and subsequent management of the condition is essential. Since the only preventive strategy is control of hyperglycemia, hyperlipidemia and hypertension early detection of DR becomes even more essential. In addition, regarding its treatment, currently available interventions, such as laser photocoagulation, significantly decrease the likelihood of blindness in proliferative retinopathy and diabetic maculopathy in up to 98%, if the eyes are treated at an early stage of the disease.

ADVANTAGES :

- Diabetic retinopathy , an ocular disease is governed by systematic as well as local ocular factors.
- These include primarily chronic levels of blood glucose .
- The mechanism of this effect may not be directly related to the reduction in blood lipids.

DRAWBACKS :

- There was no automatic detection system.
- Lost of manual efforts.
- Didn't benefit the diabetic patients inaspects of early diagnosis and detetion of retinopathy.