

# DEEP LEARNING FUNDUS IMAGE ANALYSIS FOR EARLY DETECTION OF DIABETIC RETINOPATHY

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## LITERATURE SURVEY

S.NO	PAPER	AUTHOR	YEAR	METHOD AND ALGORITHM	ACCURACY
1.	Deep learning algorithms for detection of diabetic retinopathy in retinal fundus photographs: A systematic review and meta-analysis	Md Mohaimenul Islam, Hsuan-Chia Yang, Tahmina Nasrin Poly, Wen-Shan Jian, Yu-Chuan	2020	To estimate how well DL algorithms work in detecting DR, relevant studies were reviewed systematically and their meta-analyses were conducted. Their research's conclusions demonstrated that DL-algorithms were very sensitive and specific for identifying referable DR in retinal fundus images.	97%
2.	Diabetic Retinopathy Diagnosis Through Computer-Aided Fundus Image Analysis	Jaskirat Kaur, Deepti Mittal & Ruchi Singla	2021	A crucial role is played by computer-aided diagnostic assistance to an expert in the routine chores of diagnosing DR. As a result, several techniques are being employed to create these systems for the qualitative analysis of retinal fundus images, including morphology and thresholding, filtering, supervised techniques, and hybrid techniques.	97.8%
3.	Deep Learning Techniques for Diabetic Retinopathy	Mohammad Z. Atwany, Abdulwahab H.	2022	Binary categorization of diabetic retinopathy, which seeks to identify the	96.3%

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	Classification	Sahyoun, Mohammad Yaqub		condition's presence or absence, and multi-class classification, which pinpoints the condition's precise stage In order to concentrate on lesion-based categorization, Supervised, Self-supervised, and Transformer approaches were created.	
4.	Design an Early Detection and Classification for Diabetic Retinopathy by Deep Feature Extraction based Convolution Neural Network	Akey Sungheetha Kumarasuvamy, Rajesh Sharma Rajendran	2021	They suggested conducting research that uses convolutional neural networks and deep networks to extract the features (CNN). On the photos for mild DR, the micro aneurysm may be visible in the early phases of the shift from a healthy to a sick condition. Using the confusion matrix detection data, the severity of the diabetes condition can be categorised.	95.9%
5.	Deep learning architecture based on segmented fundus image features for classification of diabetic retinopathy	Sraddha Das, Kriti Kharbanda, Suchetha M, Rajiv Raman, Edwin Dhas D	2021	The classifier was trained using a convolution neural network (CNN) in order to conduct classification. The CNN is built for classification and has a convolution and pooling layer architecture for classification between the two classes, along with squeeze, excitation, and bottleneck layers, one for each class. for assessing the suggested algorithm's performance. They make use of the DIARETDB1 dataset, which contains fundus scans of both	98.7%

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				damaged and healthy retinas.	
6.	Diagnostic assessment of deep learning algorithms for diabetic retinopathy screening	Tao Li, Yingqi Gao, Kai Wang, Song Guo, Hanruo Liu, Hong Kang	2019	From 9598 patients, 13,673 fundus pictures were gathered. According on the image quality and DR level, these photographs were categorised into six classes by seven graders. In addition, 757 DR-affected photos were chosen to annotate four different types of DR-related lesions. Finally, we assessed cutting-edge deep learning methods for object detection, semantic segmentation, and picture classification on the collected photos.	82%