

LITERATURE SURVEY

S.no	Authors	Title	Summary
1	R. Priya, P. Aruna	DIAGNOSIS OF DIABETIC RETINOPATHY USING MACHINE LEARNING TECHNIQUES	In this paper, to diagnose diabetic retinopathy, three models like Probabilistic Neural network (PNN), Bayesian Classification and Support vector machine (SVM) are described and their performances are compared. The amount of the disease spread in the retina can be identified by extracting the features of the retina. The features like blood vessels, haemorrhages of NPDR image and exudates of PDR image are extracted from the raw images using the image processing techniques and fed to the classifier for classification. A total of 350 fundus images were used, out of which 100 were used for training and 250 images were used for testing
2	T. A. Soomro <i>et al.</i>	Deep Learning Models for Retinal Blood Vessels Segmentation: A Review	This paper presents a comprehensive review of the principle and application of deep

			<p>learning in retinal image analysis. This paper characterizes each deep learning based segmentation method as described. Analyzing along with the limitations and advantages of each method. In the end, we offer some recommendations for future improvement for retinal image analysis.</p>
3	<p>Mayuresh shelar, Sonali Gaitonde, Amudha Senthilkumar, Mradul Mundra</p>	<p>Detection of Diabetic Retinopathy and its Classification from the Fundus Images</p>	<p>Through this paper, we propose a solution to address the problem of timely detection of Diabetic Retinopathy using a model developed using Artificial Intelligence. This model uses machine learning to identify Diabetic Retinopathy in the retina fundus images and classify them into various stages of progress of disease as Normal, Moderate and Proliferative Diabetic Retinopathy (PDR), with main focus being the Binary Classification, which will help doctors in the treatment of patients. Classification of the images into the different stages of eye disease was done</p>

			using Convolutional Neural Networks with Transferred Learning.
4	B. Bulut, V. Kalın, B. B. Güneş and R. Khazhin.	Deep Learning Approach For Detection Of Retinal Abnormalities Based On Color Fundus Images	<p>This research uses the Xception model with transfer learning method to classify images obtained from Akdeniz University Hospital Eye Diseases Department. During the analysis, the Xception model containing 50 different parameter combinations was trained by scanning the appropriate hyper-parameter space for the model.</p> <p>Comparisons were made for the top 9 models with the highest performance. In order to test the performance of the model with an independent data set, open access fundus images were used for test analysis and binary classification AUC (Area Under Curve) values were calculated for 21 different diseases.</p>
5	N. Memari, S. Abdollahi, M. M. Ganzagh and M. Moghbel.	Computer-assisted diagnosis (CAD) system for Diabetic Retinopathy screening using color fundus images using Deep learning	<p>The proposed computer-assisted diagnosis system starts with the segmentation of the blood vessels. Then, microaneurysms and</p>

			<p>exudates are segmentation from the image. Statistical and regional features are then extracted utilizing first, second, and higher-order image features. A Deep Learning framework will be utilized for extracting additional statistical image descriptors as Deep Learning has superior contextual analysis capabilities compared to other machine learning techniques.</p>
6	<p>S. Suganyadevi; K. Renukadevi; K. Balasamy; P. Jeevitha</p>	<p>Diabetic Retinopathy Detection Using Deep Learning Methods</p>	<p>This paper will mostly examine existing early DR diagnostic tools to determine their merits and drawbacks. Although pictures from fluorescein angiography, colour fundus medical images or visual lucidity tomography angiography are used for early diagnosis. Only colour fundus medical images are included in this study. It is possible to categorise the early DR detection methods described in this paper as either classical image processing, traditional machine learning, or deep learning. The</p>

			issues that must be addressed in creating such efficient, effective and resilient methods for initial detection of DR systems are discussed in length in this study, as is the substantial opportunity for future research in this field.
7	H. Yeh, C. -J. Lin, C. -C. Hsu and C. -Y. Lee.	Deep-learning based automated segmentation of Diabetic Retinopathy symptoms	Deep learning is used in many types of preprocessing for segmentation. We preprocessed fundus images and inputted them into the model for training. Finally, LDF image was used to obtain the best preprocessing method for optic disc segmentation in fundus images.
8	Muhammad Mateen; Junhao Wen; Mehdi Hassan; Nasrullah Nasrullah	Automatic Detection of Diabetic Retinopathy: A Review on Datasets, Methods and Evaluation Metrics	This paper presents a detailed review of the detection of DR with three major aspects; retinal datasets, DR detection methods, and performance evaluation metrics. Furthermore, this study also covers the author's observations and provides future directions in the field of diabetic retinopathy to overcome the research challenges for the research

			community.
9	A. Bali and V. Mansotra.	Deep Learning-based Techniques for the Automatic Classification of Fundus Images: A Comparative Study	In this paper different deep learning (DL) techniques for automatic classification of fundus images have been discussed and results are compared on the basis of accuracy, f1-score and AUC.
10	Eugenio Vocaturo ; Ester Zumpano	The contribution of AI in the detection of the Diabetic Retinopathy	the primary method for evaluating diabetic retinopathy involves direct and indirect ophthalmoscopy, Artificial Intelligent, deep learning and big data have been on the rise in the eye care sector. These tools provide low-cost, effective and potential solutions in supporting early and accurate diagnosis, both facilitating the work of specialists and allowing to select specific treatments. In this paper analyze AI tools used in the screening of diabetic retinopathy.

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