| S. NO | TOPIC & AUTHOR | YEAR & PUBLICATION | METHODOLOGY | ADVANTAGE | DRAWBACK |
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| 1 | Deep Learning Fundus Image Analysis for Diabetic Retinopathy and Macular Edema Grading<br><br>Jaakko Sahlsten, · Joel Jaskari, | 24 July 2019<br><br>*Scientific Reports* | Systematic computation | It is accurate | The image grading reference could unavoidably include grader biases that can result in decreased generalization performance of the model |
| 2 | Development and Validation of a Deep Learning Algorithm for Detection of Diabetic Retinopathy in Retinal Fundus Photographs<br><br>Varun Gulshan, Lily Peng, | December 13, 2016, JAMA | Deep learning algorithms | High sensitivity and specificity for detecting referable diabetic retinopathy | Time consuming |
| 3 | Early detection of diabetic retinopathy based on deep learning and ultra-wide-field fundus images<br><br>Hae Min Kang, Dawoon Leem, | 21 January 2021<br><br>*ScientificReports* | Single-field fundus photography | As for performance indicators, we employ the accuracy, AUC, sensitivity, and specificity. | Limitations of our approach is that we set an ROI for the DR detection to the ETDRS 7SF among the entire captured area of the retina in the UWF photography. |
| 4 | Using a Deep Learning Algorithm and Integrated Gradients Explanation to Assist Grading for Diabetic Retinopathy<br><br>Ankur Taly, Rory Sayres, PhD | December 13, 2018<br><br>Ophthalmology | International Clinical Diabetic Retinopathy | Accuracy, speed, and confidence of readers | Although time spent on task increased overall, we saw evidence that the increase in grading time diminished |
| 5 | Automated Identification of Diabetic Retinopathy Using Deep Learning | March 27, 2017<br><br>Ophthalmology | Deep learning algorithm | An algorithm on a global basis could reduce | Fundus photographs have a low |

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| | Rishab Gargeya Theodore Leng.MS ,MD | | | drastically the rate of vision loss | sensitivity and specificity |
| 6 | Deep learning for diabetic retinopathy detection and classification based on fundus images<br><br>Nikos Tsiknakis, Dimitris Theodoropoulos | 7 May 2021 Google Scholar | Kaggle EyePACS | Increase of computational resources and capabilities | Perform poorly under typical practical situations |
| 7 | Diagnosis of Diabetic Retinopathy through Retinal Fundus Images and 3D Convolutional Neural Networks<br><br>An Bin Tufail Inam Ullah | 17 Nov 2021 Hindawi | 3D-CNN architectures | Combined augmentation methods to be the best while the performance of model | Consumes more time ,cost to manufacture |