

ABSTRACT

In this project, we propose a CNN approach to diagnosing DR from digital fundus images. We develop a network with CNN architecture and data augmentation which can identify the intricate features involved in the classification task such as micro-aneurysms, exudates, and hemorrhages on the retina and consequently provide a diagnosis automatically and without user input. Diabetic retinopathy falls into two main classes: non proliferative and proliferative. The word "proliferative" refers to whether or not there is neovascularization (abnormal blood vessel growth) in the retina. Early disease without neovascularization is called non proliferative diabetic retinopathy (NPDR). As the disease progresses, it's going to evolve into proliferative diabetic retinopathy (PDR), which is defined by the presence of neovascularization and features a greater potential for serious visual consequences. The proposed system overcomes the existing contact methods and replaces it by applying Multiple Neural or hidden Layers and accurately classifies its severity. The Feature Extraction gives us a broad view of the X-Ray image which is given and helps us to process the image for preprocessing. The given system has overcome the errors and has higher efficiency than the current image processing methods. By the usage of multiple hidden layers such as conv2D, max pool, flatten and dense the area of the diabetic retinopathy is detected, the area is calculated and it can be viewed by the user in the shell of python. The accurate percentage level of disease affected is predicted and the medicine is prescribed.