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Team ID	PNT2022TMID51065
Project Name	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy.
Maximum Marks	2 Marks

Deep Learning Fundus Image Analysis For Early Detection Of Diabetic Retinopathy

ABSTRACT:

Diabetic retinopathy is an eye condition that can cause vision loss and blindness in people who have diabetes. It affects blood vessels in the retina (the light-sensitive layer of tissue in the back of your eye). If you have diabetes, it's important to get a comprehensive dilated eye exam at least once a year. Diabetic retinopathy may not have any symptoms at first — but finding it early can help you take steps to protect your vision. We also provide novel results for five different screening and clinical grading systems for diabetic retinopathy including state-of-the-art results for accurately classifying images according to clinical five-grade diabetic retinopathy. These results suggest, that a deep learning system could increase the cost-effectiveness of screening and diagnosis, while attaining higher than recommended performance, and that the system could be applied in clinical examinations requiring finer grading.

INTRODUCTION:

People with diabetes can have an eye disease called diabetic retinopathy. This is when high blood sugar levels cause damage to blood vessels in the retina. These blood vessels can swell and leak. Or they can close, stopping blood from passing through. Sometimes abnormal new blood vessels grow on the retina. All of these changes can steal your vision. The evaluation of the severity and degree of retinopathy associated with a person having diabetes, is currently performed by medical experts based on the fundus or retinal images of the patient's eyes.

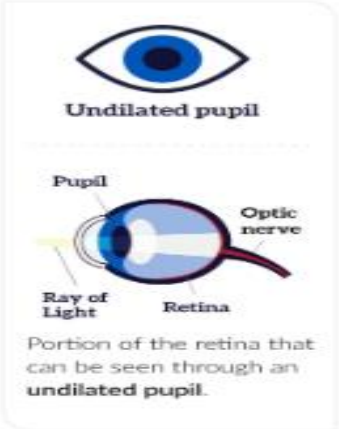
EXISTING SYSTEM:

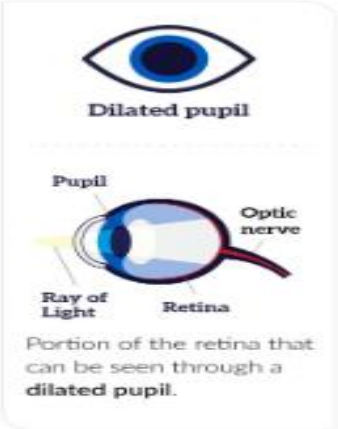
Get a Dilated Eye Exam

A dilated eye exam is the best thing you can do for your eye health! It's the only way to check for eye diseases early on, when they're easier to treat — and before they cause vision loss.

The exam is simple and painless. Your eye doctor will check for vision problems that make it hard to see clearly, like being nearsighted or farsighted. Then your doctor will give you some eye drops to dilate (widen) your pupil and check for eye diseases.

Since many eye diseases have no symptoms or warning signs, you could have a problem and not know it. Even if you think your eyes are healthy, getting dilated eye exam is the only way to know for sure.





CNNs are more widely used more than the other methods in medical image analysis, and it is highly effective .

Generally, the process used to detect and to classify DR images using DL begins by collecting the dataset and by applying the needed preprocess to improve and enhance the images. Then, this is fed to the DL method to extract the features and to classify the images

DISADVANTAGES OF EXISTING SYSTEM:

- The continuous dilation of the pupils can cause long-term vision problems.
- CNN do not encode the position and orientation of object.
- The cost of treatment is high.

REFERENCES:

- Science direct.
- Scientific reports.