

Date	17 October 2022
Team ID	PNT2022TMID18647
Project Name	<u>Deep Learning Fundus Image Analysis For Early Detection Of Diabetic Retinopathy</u>
Maximum Marks	2 marks

**Project:** Deep Learning Fundus Image Analysis For Early Detection Of Diabetic Retinopathy

**Introduction:**

Diabetic retinopathy (DR) indicated that a significant amount of patients with diabetes failed to have recommended annual eye examinations due to long examination times, lack of symptoms, and limited access to retinal specialists. One of the efforts to resolve these barriers is the application of artificial intelligence (AI) techniques for DR detection and diagnosis.

**Questions:**

1. Who does this problem affect?

The abnormal blood vessels associated with diabetic retinopathy stimulate the growth of scar tissue, which can pull the retina away from the back of the eye. This can cause spots floating in your vision, flashes of light or severe vision loss

2. What are the common symptoms?

- Spots or dark strings floating in your vision (floaters).
- Blurred vision.
- Fluctuating vision.
- Dark or empty areas in your

vision.

3. When does the issue occur?

The condition can develop in anyone who has type 1 or type 2 diabetes. The longer you have diabetes and the less controlled your blood sugar is, the more likely you are to develop this eye complication.

4. Why is it important to fix the problem in early stages?

Early treatment can stop the damage and prevent blindness.

5. What are the current methods to diagnose?

Diabetic retinopathy is best diagnosed with a comprehensive dilated eye exam. For this exam, drops placed in your eyes widen (dilate) your pupils to allow your doctor a better view inside your eyes. The drops can cause your close vision to blur until they wear off, several hours later.

**Problem Statement:**

In our study we have demonstrated that a deep learning AI-system applied to a relatively small retinal image dataset could accurately identify the severity grades of diabetic retinopathy and macular edema and that its accuracy was improved by using high resolution and quality images.