

PROBLEM STATEMENT:

Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy.

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Diabetic Retinopathy (DR) is a common complication of diabetes mellitus, which causes lesions on the retina that affect vision. If it is not detected early, it can lead to blindness. Unfortunately, DR is not a reversible process, and treatment only sustains vision. DR early detection and treatment can significantly reduce the risk of vision loss.

Who does the problem affect?	Anyone with type 1 diabetes or type 2 diabetes
Can diabetic retinopathy be corrected?	While treatment can slow or stop the progression of DR, it's not a cure. Because diabetes is a lifelong condition, future retinal damage and vision loss are still possible.
Symptoms	<ul style="list-style-type: none"> • Blurry vision. • Inability to see colours. • Fluctuations in vision. • Dark strings and colourless spots floating in your visual field (floaters) • Deteriorating night vision.
Which is the first stage of diabetic retinopathy?	The first stage is also called background retinopathy. It means that there are tiny bulges in the tiny blood vessels in your retinas. The bulges are called microaneurysms. They may cause the vessels to leak small amounts of blood into your retinas.
How long does it take for diabetes to cause retinopathy?	Typically, diabetic patients will develop diabetic retinopathy after they have had diabetes for between 3-5 years. In the early stages, diabetic retinopathy will not affect the sight, but if it is not treated and progresses, eventually the sight will be affected.
What is the strongest predictor of diabetic retinopathy?	Longer diabetes duration and higher HbA _{1c} levels measured at any time interval during follow-up were the strongest predictors of development/progression of DR.
What is the most common treatment for diabetic retinopathy?	For diabetic retinopathy that is threatening or affecting your sight, the main treatments are: laser treatment – to treat the growth of new blood vessels at the back of the eye (retina) in cases of proliferative diabetic retinopathy, and to stabilize some cases of maculopathy.

