

**E-OPHTHALMOLOGIST: AN EARLY DETECTION  
AND MANAGEMENT SYSTEM FOR DIABETIC  
RETINOPATHY**

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## **Abstract**

Diabetic retinopathy is a major cause of vision loss in low and middle-income countries and developed countries as well. This condition is triggered by diabetes and is estimated to affect over 600 million people by 2040. This means that the prevalence of retinopathy would skyrocket. Individuals with diabetic retinopathy can experience no symptoms before the disease progresses to the point of vision loss. As a result, medically underserved individuals are more likely to experience diabetic retinopathy-related blindness.

The project aims to investigate the different factors that contribute in increase of diabetic retinopathy patients and to design, develop, and evaluate a solution capable of assisting people with their challenges through the development of a mobile application for treating retinopathy by delivering tailored risk assessment and detecting retinopathy stages efficiently.

**E-Ophthalmologists** will do an in-depth study of all risk factors for retinopathy in individuals and will provide a tailored risk assessment to ascertain the likelihood of developing vision-threatening retinopathy. It will be able to scan fundus images and diagnose different stages of retinopathy. Additionally, this system will have retinopathy management features to facilitate enhance consumer use.

The solution is reviewed and evaluated by domain experts and non-expert stakeholders to determine the feasibility of the project and the benefit that the solution would offer.