

Project Design Phase-I
Proposed Solution

Date	16 October 2022
Team ID	PNT2022TMID48925
Project Name	Project - Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Diabetic retinopathy is a state which is due to the damage of blood vessels of the retina. Considering the fact that Retina is the sensitive part it can result in blurry, less intense eye sight and it can also result in disappearing of eye sight. The diabetic retinopathy may cause no symptoms at In its earliest stages, They initial symptoms may be barely noticeable or mild. As time goes on, the state of this issue can worsen and lead to partial and then complete blindness to the individual which must be taken care of beforehand to get better at early stages. Thus early detection of the diabetic retinopathy is highly recommendable.
2.	Idea / Solution description	By the use of a hybrid model that perfectly unites different computations, processes, or procedures from equivalent or different spaces of data or areas of usage fully intended to enhance each other.
3.	Novelty / Uniqueness	Many deep learning models have emerged and put it in to use but CNN was used for image processing tasks. People who train and test in CNN will have large dataset and it really takes time. To tackle these kinds of difficulties, transfer learning uses a pre-trained model which already trained on variety of images that can be transferred to second related problem. The early detection of the DR will help the patients in the early stage itself rather than in the developed stage of the disease. The high accuracy that was attained by using transfer learning techniques and Convolutional Neural Network makes the project more reliable and efficient.

4.	Social Impact / Customer Satisfaction	This model can detect the infection of diabetic retinopathy from early-to-late stages with all clinical grades of the customer
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> ●Data analytics ●Statistics ●Future prediction
6.	Scalability of the Solution	The solution with the transfer learning model offers a better solution for diabetic retinopathy and can be detected at an early stage. The model developed using deep learning technology can be implemented on many clinical examinations. This system is versatile as it can learn from any datasets. It gives higher performance than manual examination.