

# 3<sup>rd</sup> Year Project

## Diabetic Retinopathy Interpretation

### Problem Statement:

In this world, there are various serious diseases leading to threatening death. And one of them is Diabetes. As per the survey from 2019, the total count of death due to diabetes was approximately 1.5 million and almost 1 of 16 people is suffering from this serious phase.

One form of diabetes is Diabetic Retinopathy(a diabetes complication which affects eyes). And detecting among diabetes patient, who are patient of diabetic retinopathy is very long process, so we will be implementing a better way to detect the diabetic retinopathy patient among the diabetic patient.

### Tools or Technologies:

- 1.) Python
- 2.) OpenCv
- 3.) Deep Learning and Machine Learning
- 4.) Image Understanding using CNN (Convolutional Neural Network)
- 5.) Artificial Intelligence Algorithm & others

## Overview and Solution:

Since the detection process of diabetic retinopathy patient leads to long process of diagnosis and multiple steps of process, so in this we will be coming up with a model that will help us to detect the same in better way and with quite more accuracy.

The process that the model will follow will be.

i.) It will take the image of retina of all the diabetes patient.

ii.) Then we will be passing those set of images through the model, and internally model will apply the deep learning + image understanding with CNN(on the basis of how we have trained and prepared the model)..

iii.) And at final model will show us the patient which are suffering through this diabetic retinopathy phase and will be clarifying the result with better accuracy.

Along with this interpretation, will be implementing the model to determine the diabetic retinopathy stage which a particular patient has. There are mainly four stages:

- Mild Non-proliferative Retinopathy
- Moderate Non-proliferative Retinopathy
- Severe Non-proliferative Retinopathy
- Proliferative Diabetic Retinopathy

And on implementing this model in real life will be of great help. And will surely decrease the over all death of patient due to Diabetic Retinopathy upto great extent.

## **Team Members:**

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