Project Title: Deep Learning Fundus Image Analysis
For early detection of Diabetic Retinopathy.

Project Design Phase-I = Problem-Solution Fit Template

Project ID : PNT2022TMID41310

Define CS, fit into CC

1. CUSTOMER

For diabetics, early detection is crucial because diabetic retinopathy is permanent. The patient's fundus image can be used to identify diabetic retinopathy and be kept in the database. This serves a greater purpose than a manual examination.

6. CUSTOMER

Because diabetic retinopathy does not have any obvious symptoms, people are unaware they have the condition. Many people are unaware of diabetic retinopathy and its harmful effects.

5. AVAILABLE

Proliferative diabetic retinopathy can be treated with laser therapy, and some forms of maculopathy can be stabilized with laser therapy as well. eye injections to cure your sight-threatening severe maculopathy.

Explore AS, differentiate

Focus J&P,on tap into BE, RCunderstand

2. JOBS-TO-BE-DONE / PROBLEMS

J&P

The issue is that it is impossible to treat severe diabetic retinopathy.

Furthermore, the severity of diabetic retinopathy causes serious eye conditions that might lead to blindness. Therefore, if the patient has diabetes, early identification is crucial.

9. PROBLEM ROOT CAUSE

RC

The retina, a layer of light-sensitive tissue at the rear of the inner eye, experiences alterations in its blood vessels as a result of diabetes. The blood vessels in the retina of some patients with diabetic retinopathy may enlarge and leak fluid. Others experience the aberrant growth of new blood vessels on the retinal surface.

7. BEHAVIOUR

BE

Using the pictures from the fundus, this model aids in the early diagnosis of diabetic retinopathy. I

The manual examination takes longer than this. Additionally, accuracy is higher compared to other methods.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS

TR

Patients with diabetic retinopathy experience these triggers:

You may notice spots or black strings in your vision (floaters) distorted vision.

unstable eyesight.

Visionary voids or patches of darkness.

loss of vision

4. EMOTIONS: BEFORE / AFTER

EM

Before: Fear and anxiety are examples of negative emotional reactions. concerns with self-perception, guilt, rage, insecurity, and vulnerability.

After: Patients feel more hopeful as a result of early discovery and diagnosis.

10. YOUR SOLUTION

SL

Our approach uses a deep learning model with fundus images to identify diabetic retinopathy severity in patients and to make an appropriate diagnosis following an early detection.

8.CHANNELS OF BEHAVIOUR

CH

Patients with diabetes must have their eyes examined at regular intervals. Only then may retinopathy be identified early and a correct diagnosis made.