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Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy

1.Customer segment

The detection of DR earlier is irreversible. The image stored in the database and it is detected.A 55 year old woman as been diabetic for 10 years and thought her diabetic under control but found changes in her vision. Easy to examine then manual.

6.Customer constraints

Includes restricted diet, activities does not show up any specific symptoms.
1.Medical expenses
2.The range of vision is gradually decreases
3.Continuos intake of prescribed medicine

5.Available solution

Taking eye test regularly, control of blood sugar and pressure. Incase of proliferative DR, laser treatment provides better results. Early detection of problem in eye sight can be prevented from vision loss.

2.JOBS-TO-BE-DONE/ PROBLEMS

Final stages of DR cannot be cured easily,leads to vision loss,eye illness.
complications may lead to
1.glaucoma
2.blindness
3.Vitreous hemorrahage
4.Detachment in retina

9.Problem root cause

DR caused by high blood sugar due to diabetes. Over time, having too much sugar in your blood can damage your retina the part of your eye that detects light and sends signals to your brain through a nerve in the back of your eye (optic nerve). Diabetes damages blood vessels all over the body.

7.Behaviour

This model consumes less time than manual examination, provides better accuracy. Precautions taken can control DR.

3.Triggers

Improvement in technology provides better result in medical fields. The trigger in DR patients are fluctuating vision, blurred vision, dark or empty areas in vision, floaters.

4.Emotions:Before/ After

Before:
    The responses includes fear, anxiety loss of confidence, guilt.
1.Minor internal [pain 2.permanent blindness fear
3.poor vision, insecurity

After:
    Early treatment helps vision corrected and regained.
1.Increases hope among the patient.
2.The possibility of getting blind is low.

10.Your solution

Our solution involues using a Deep learning model of Fungus image which detect severity of DR. Reduce of risk by doing
  1. Taking regular checkup of eye once in a month.
  2. Eating healthy foods that provides nutrients to body
  3. Try to intake minimum 150 minutes of moderate aerobic activity
  4. Avoid taking of alcohol, smoke.
  5. Maintain your blood sugar and blood pressure constantly.
  6. Take oral diabetics medications or insulin as directed.
  7. Don't seek to heavy light source..

8.Channels & Behaviour

Online:
    Earlier detection can prevent from DR, proper diagnosis should be done.
  1. Reading reviews of people having blurry vision.
  2. Looking for home treatment under difficult situation
  3. Analyzing the cause of problem.
Offline:'
  1. Consulting a doctor.
  2. Intaking of medicine as prescribed.
  3. Regular checkup of eyes.