Task (1)

OptiScan360

Intact Eye Better Life

Glaucoma is a common eye condition where the optic nerve, which connects the eye to the brain, becomes damaged and can cause sight loss.

So, in our project, we will make:

Early Detection Of Glaucoma Using Deep Learning

The classification is done using fundus image which is an ocular documentation that records the appearance of a patient's retina.

Team Members:

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Task (2)

First: PEAS

- **Performance:**

  Accuracy, responding time, low cost (as we use only one test instead of using 6 tests), number of correct detections.

- **Environment:**

  Junior ophthalmologist, hospitals.

- **Actuators:**

  Screen display.

- **Sensors:**

  Fundus camera.

Second: environment characteristics:

- **Partially observable**

  (the dataset may not contain all cases that can be diagnosed as Glaucoma)

- **Dynamic**

  (as the environment (fundus image of the eye) changes)

- **Discrete**

  (as the output is glaucoma or not (only two static outputs))

- **Stochastic**

  (as there is probability for wrong detection)

- **Episodic**

  (the next state does not depend on the previous state)

- **Single agent**

Task (3)

Problem Formulation:

1- Initial state:

The Fundus image and the history of the patient (if exists).

2- Actions (Transition model):

To detect if the patient has Glaucoma or not.

3- Goal test:

The correct detection of Glaucoma with accuracy up to 97%

4- Path cost:

The model complexity in training the model.