# 3D OCT REPORT GENERATOR

**Problem Statement :**

Develop a tool to analyze, detect and measure the severity of various ocular diseases by visualizing the retinal micro architecture as cross sectional volumetric data.

**Following are the goals**

1. Detection of traits in different retinal layers.

2. Measure the severity of each retinal feature (trait)

3. To find the associated disease from the known traits.

**Deliverables**

OCT Report Generator

**Sub Tasks**

To generate segments of different retinal layers. To detect dis-continuity,swelling and contours To detect possible disease from various found traits.

**Diseases we intent to detect and work on:**

1. Macular hole
2. Wet AMD
3. Fluid detection and calculation(sub-retinal &intra-retinal swellings)

(AND FURTHER PARAMETERS TO BE INCLUDED ON NEXT MEET WITH THE DOCTERS)

**METHODS(TAKEN INTO ACTION)**

* **CNN(for classification between diseases):**

Implemented on a kaggle dataset of 84k images

* **Image Processing(for preprocessing):**

1. Contour Detection (Did not prove to be effective due to a lot of noise , still to makes tweaks in the the code )
2. Colour clustering (Yet to try out)
3. SEGMENTATION (for layers segregation)

**Current Issues:**

* Inadequate dataset (for implementation of a CNN).
* Lot of ambigious images which need to be labeled by the doctor.
* Parameters need to be clarified.

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