



Team Netra

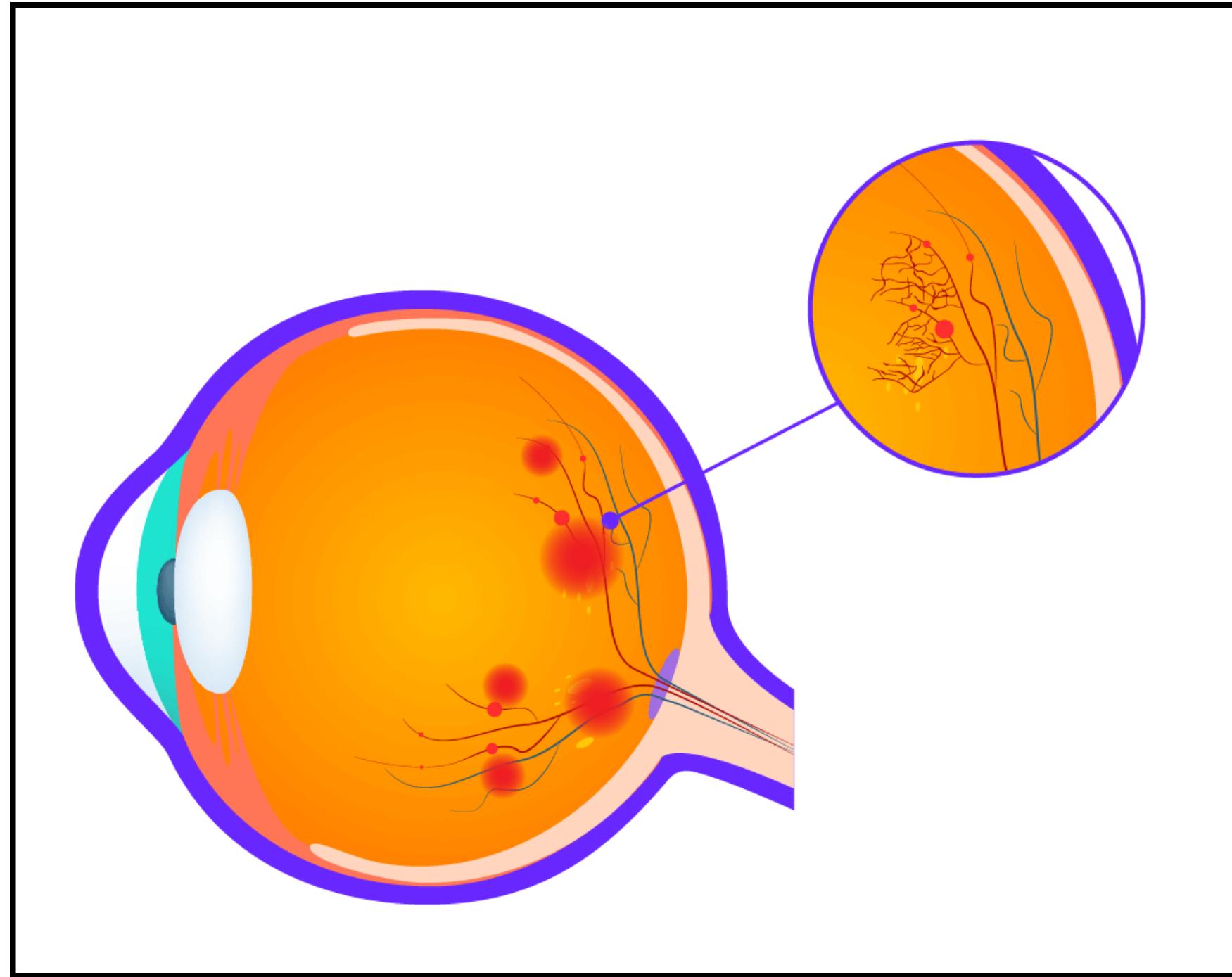
A dark, moody photograph of a woman with long dark hair. She is holding her head in her hands, with her fingers covering her eyes. Her expression is one of despair or deep emotional pain. The lighting is low, emphasizing the contours of her face and hands.

17 million

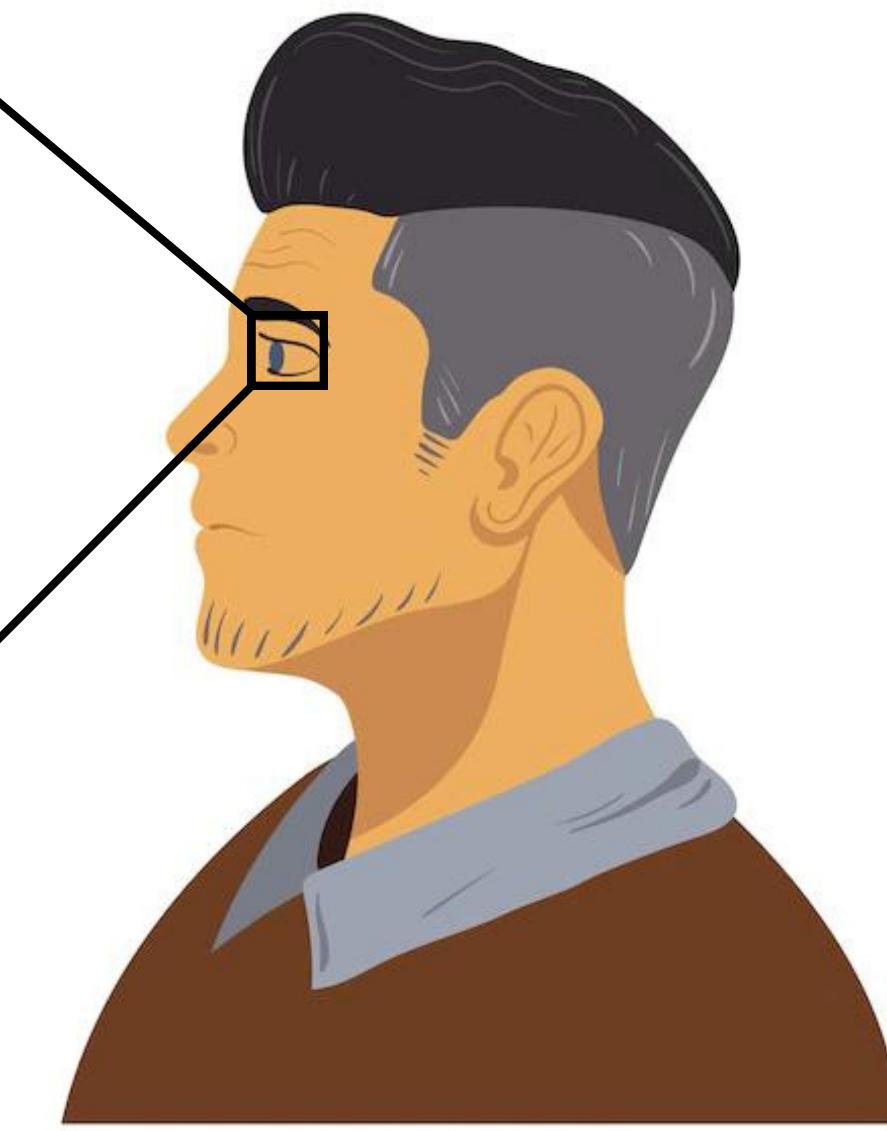
People become blind due to diabetic retinopathy

What is diabetic retinopathy?

What is diabetic retinopathy?



Damaged Lesions



Diabetes Patient

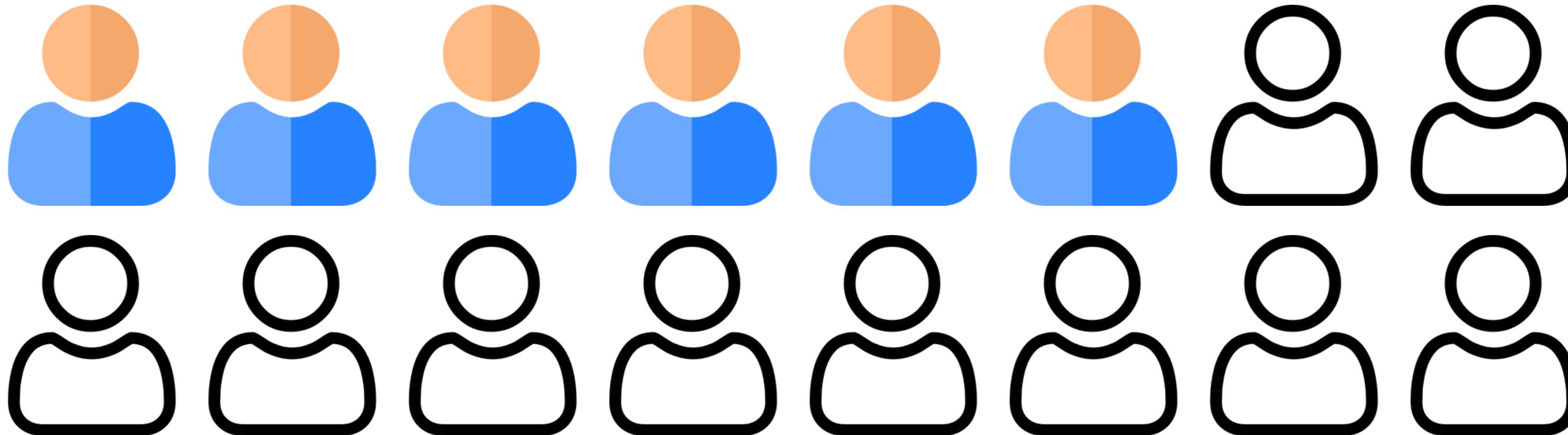


19.5%

Of all blindness
In India

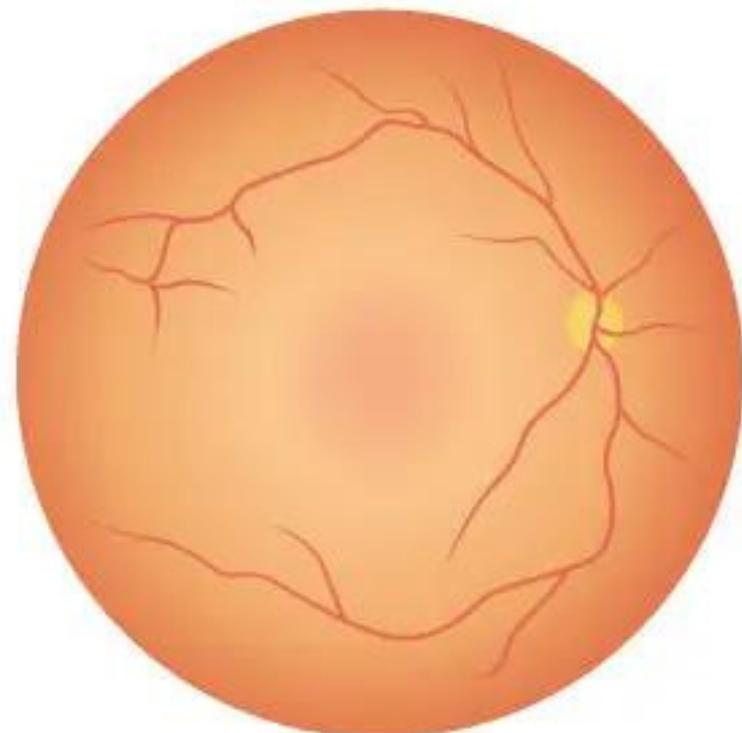


That is

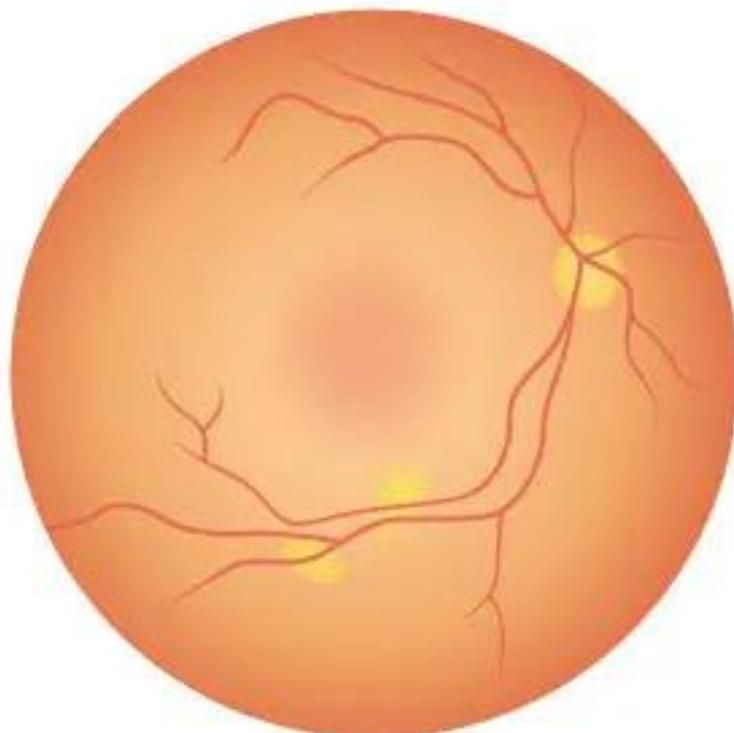


6 Out of 16

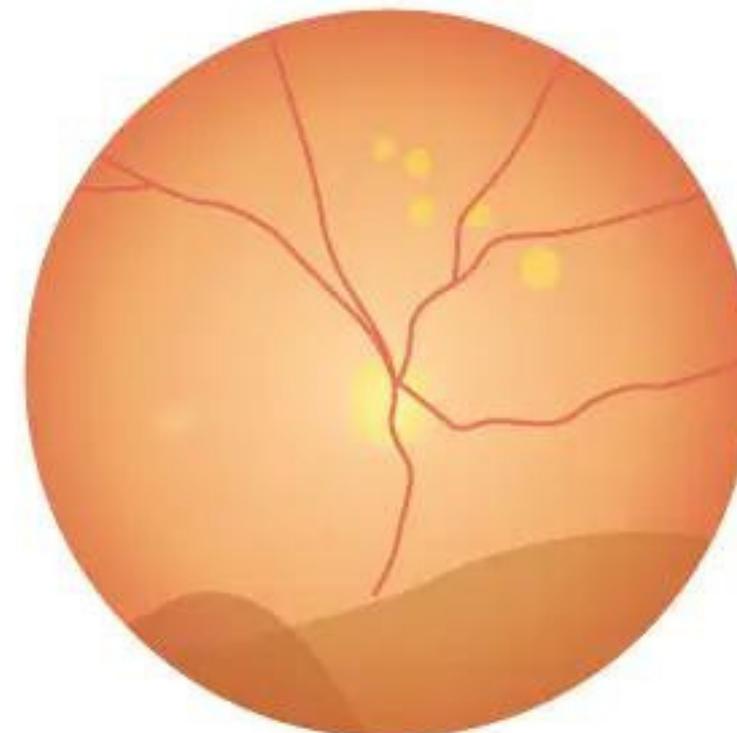
5 Stages of Diabetic Retinopathy



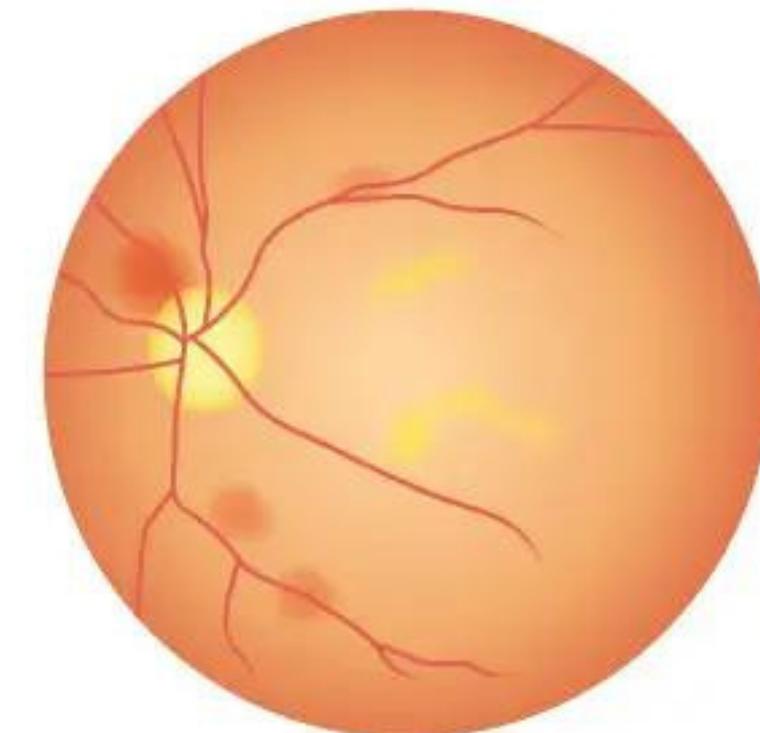
Mild NPDR



Mod. NPDR



PDR



Severe NDPR

Early detection can



Reduce risk

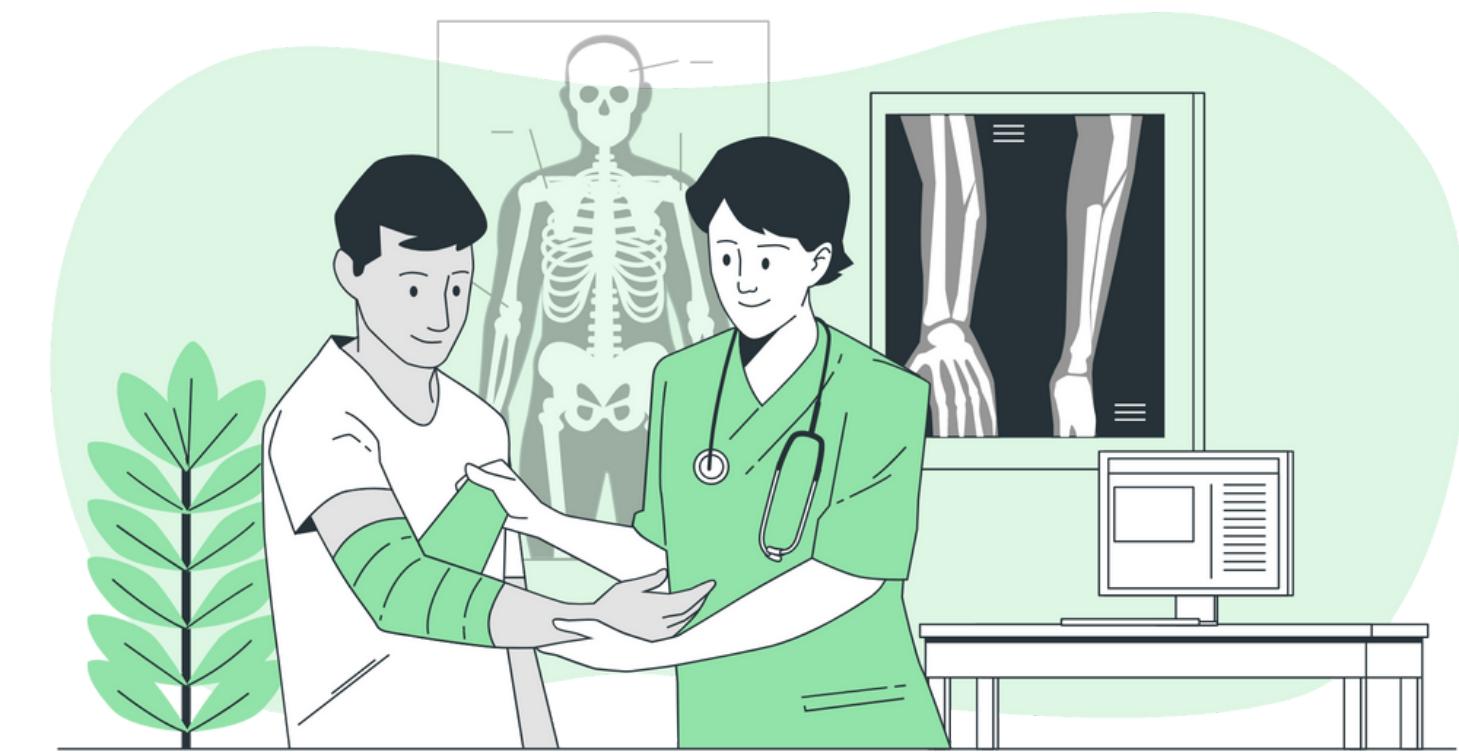


Better cure

Current Method

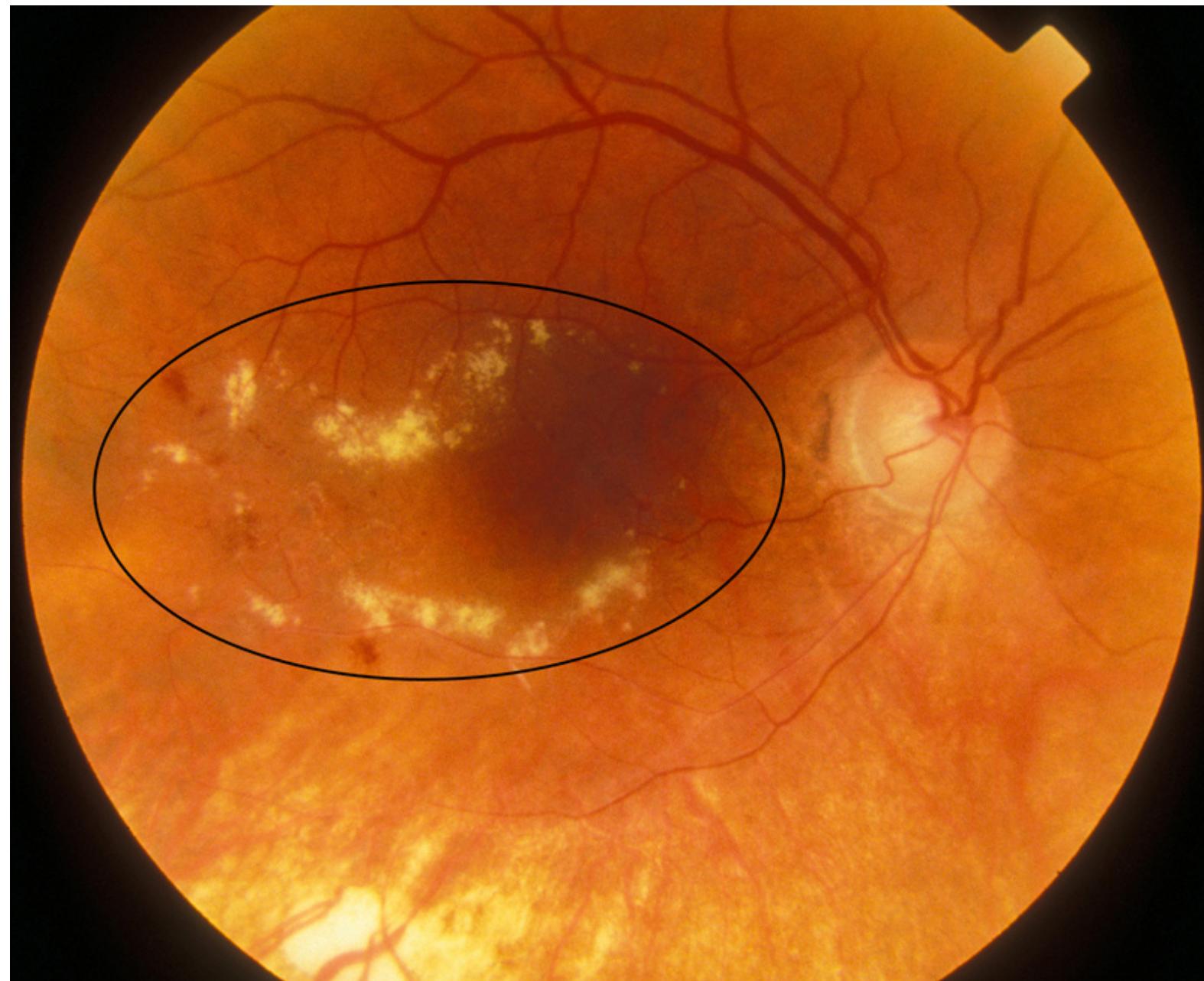


Fundus Imaging

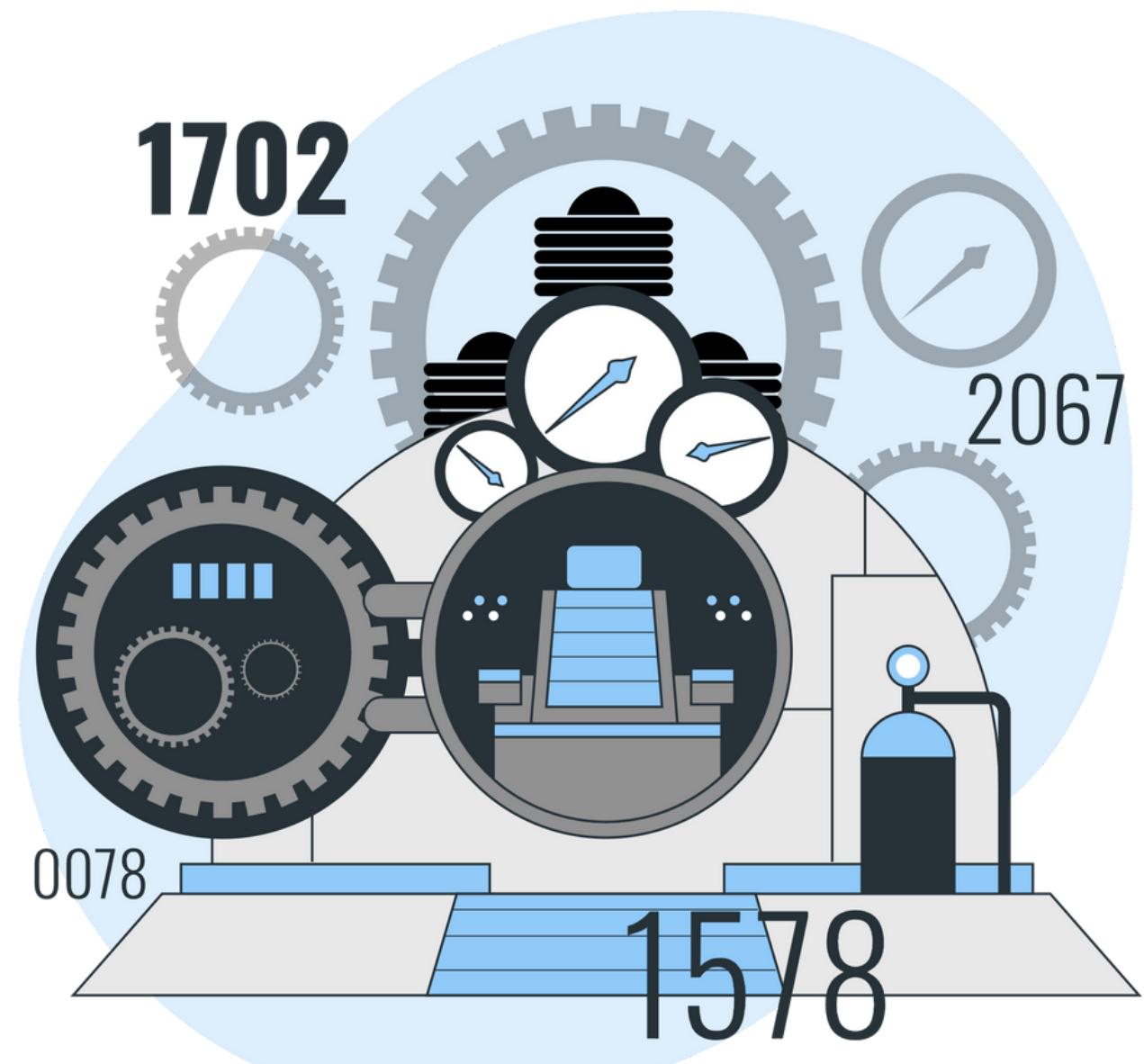


Diagnosis

Fundus Images



Problem



Time Consuming



Cost Inefficient

Problem 1

Automating diagnosis with deep learning

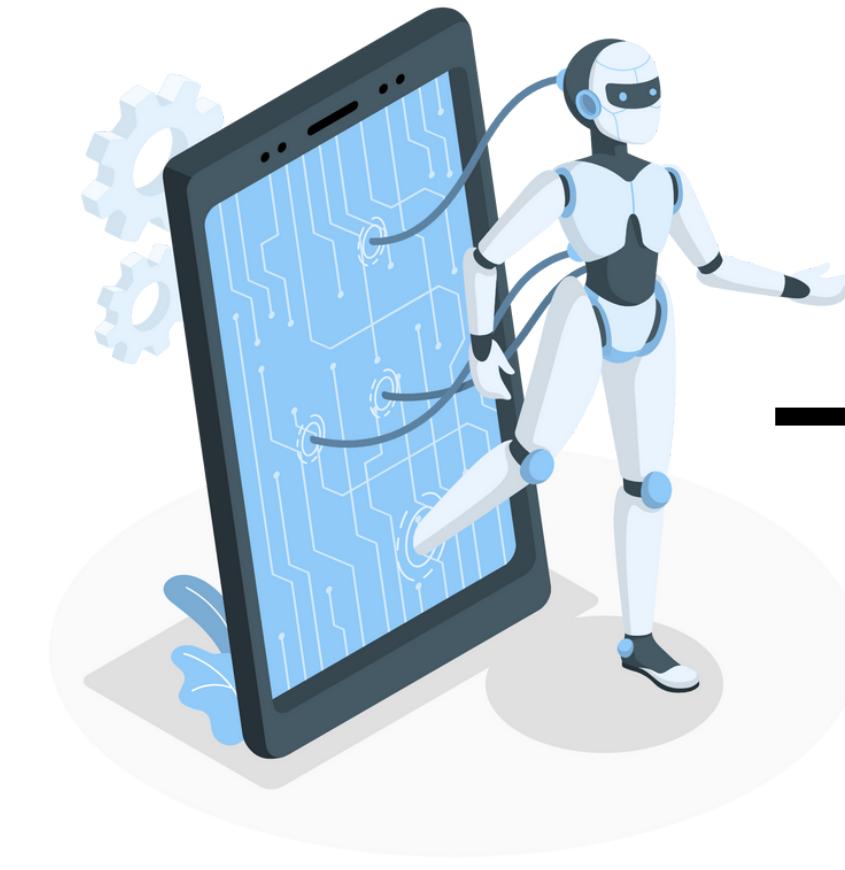
Previous Models



Data they used



Data they used

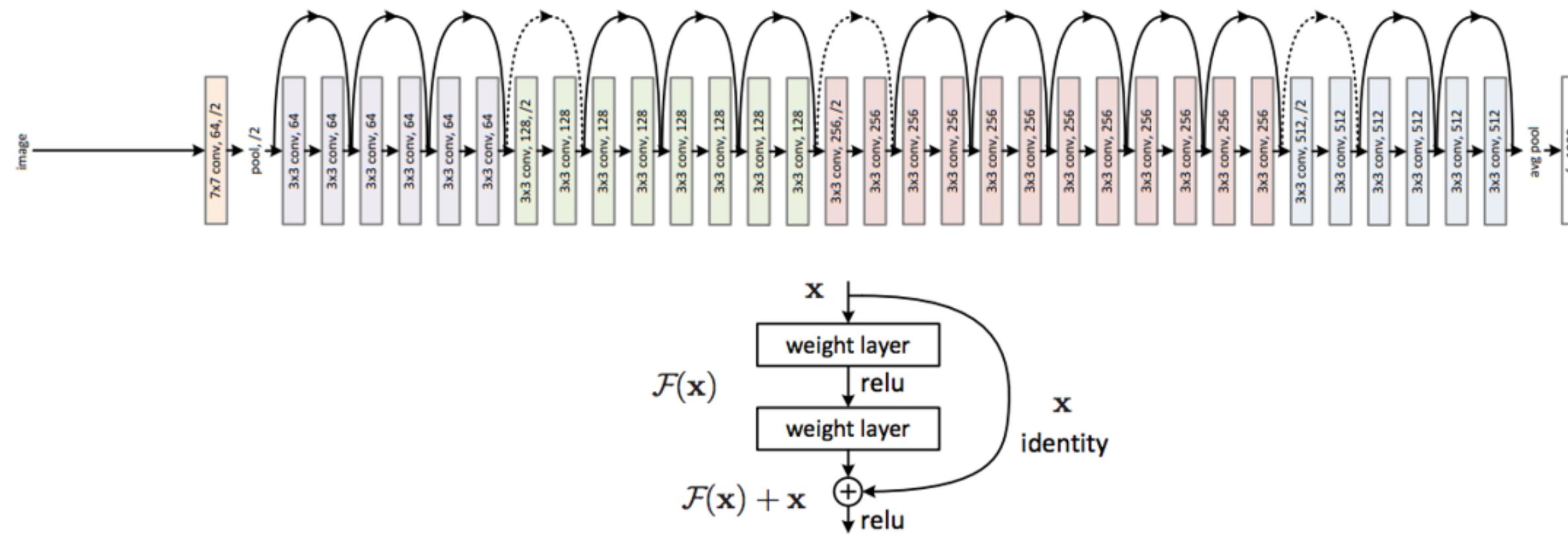


DL Model

Results

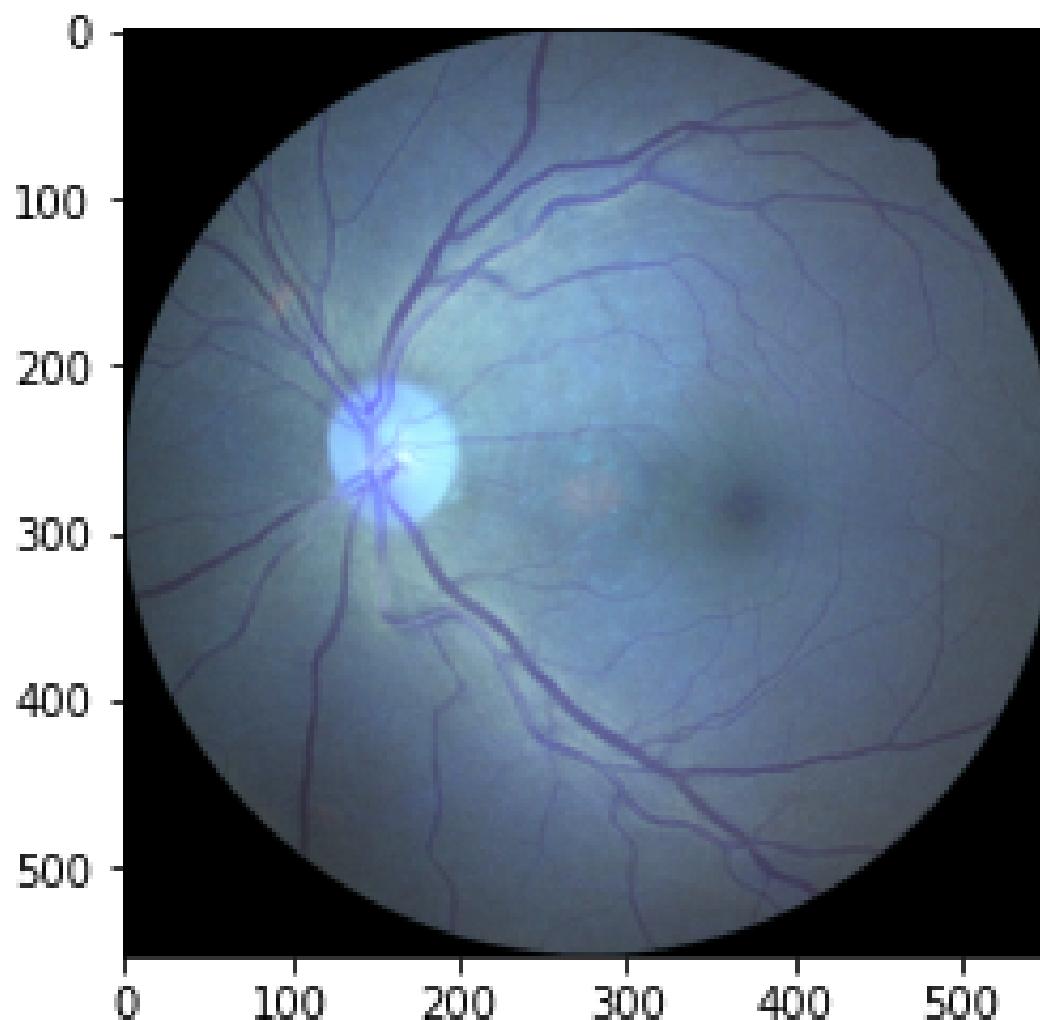
Our Model

Residual Networks (ResNet50)

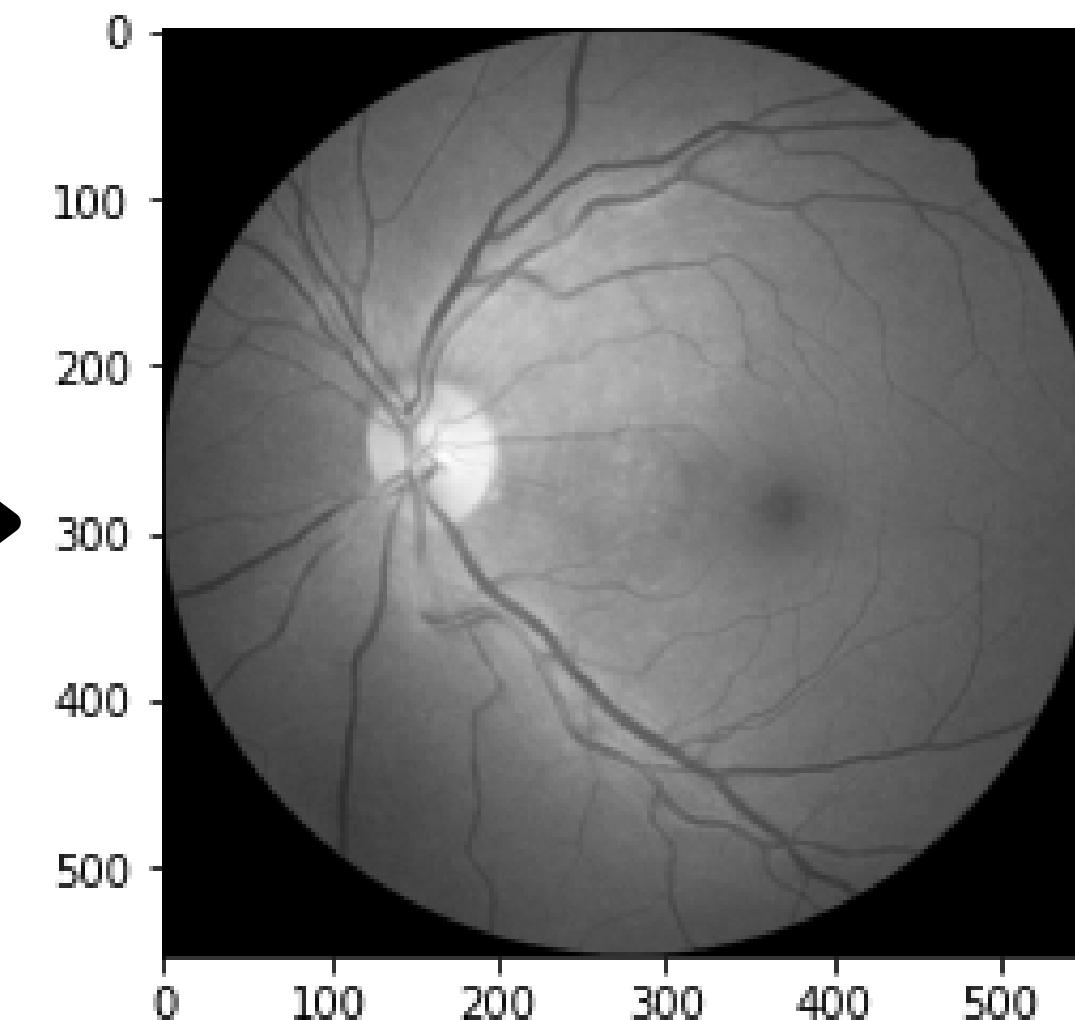


**After heavy testing we chose
ResNet50 architecture for our model**

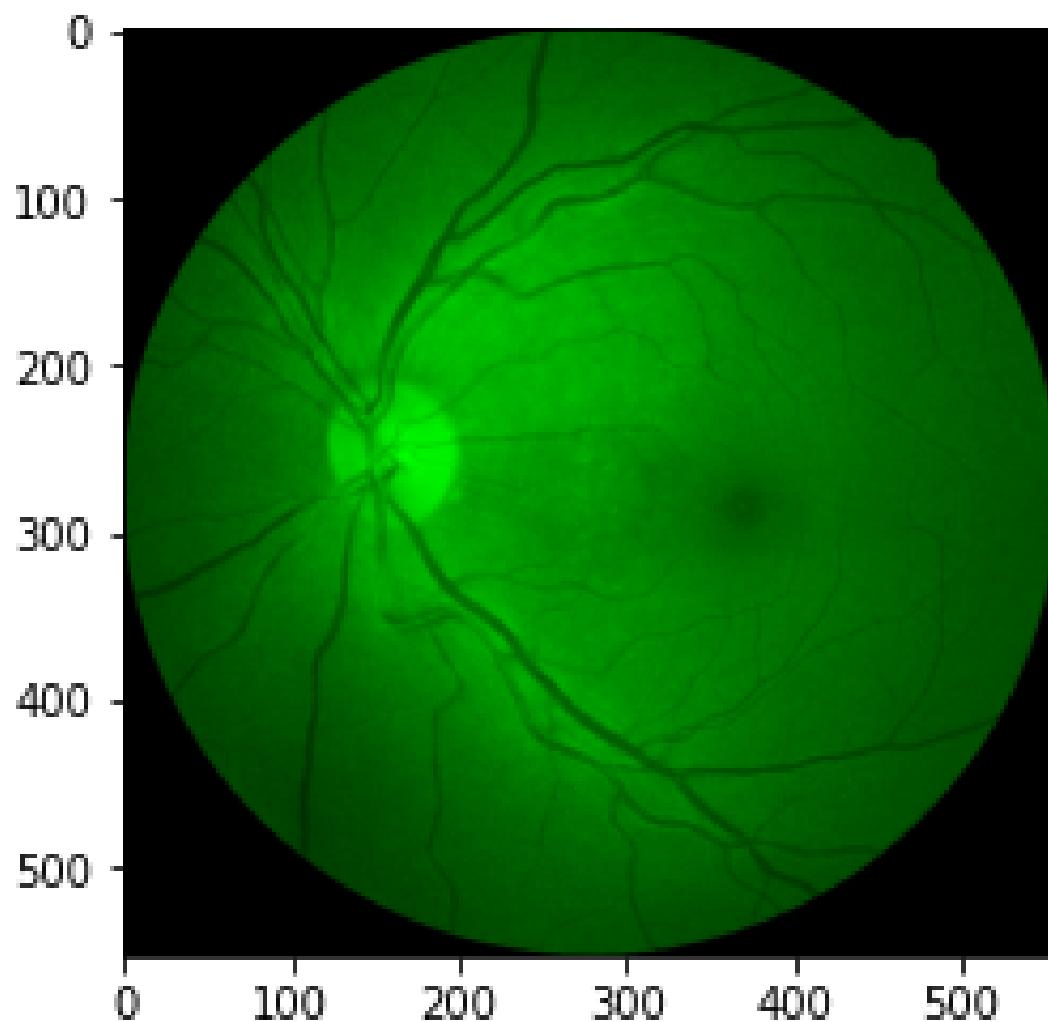
Data Optimization



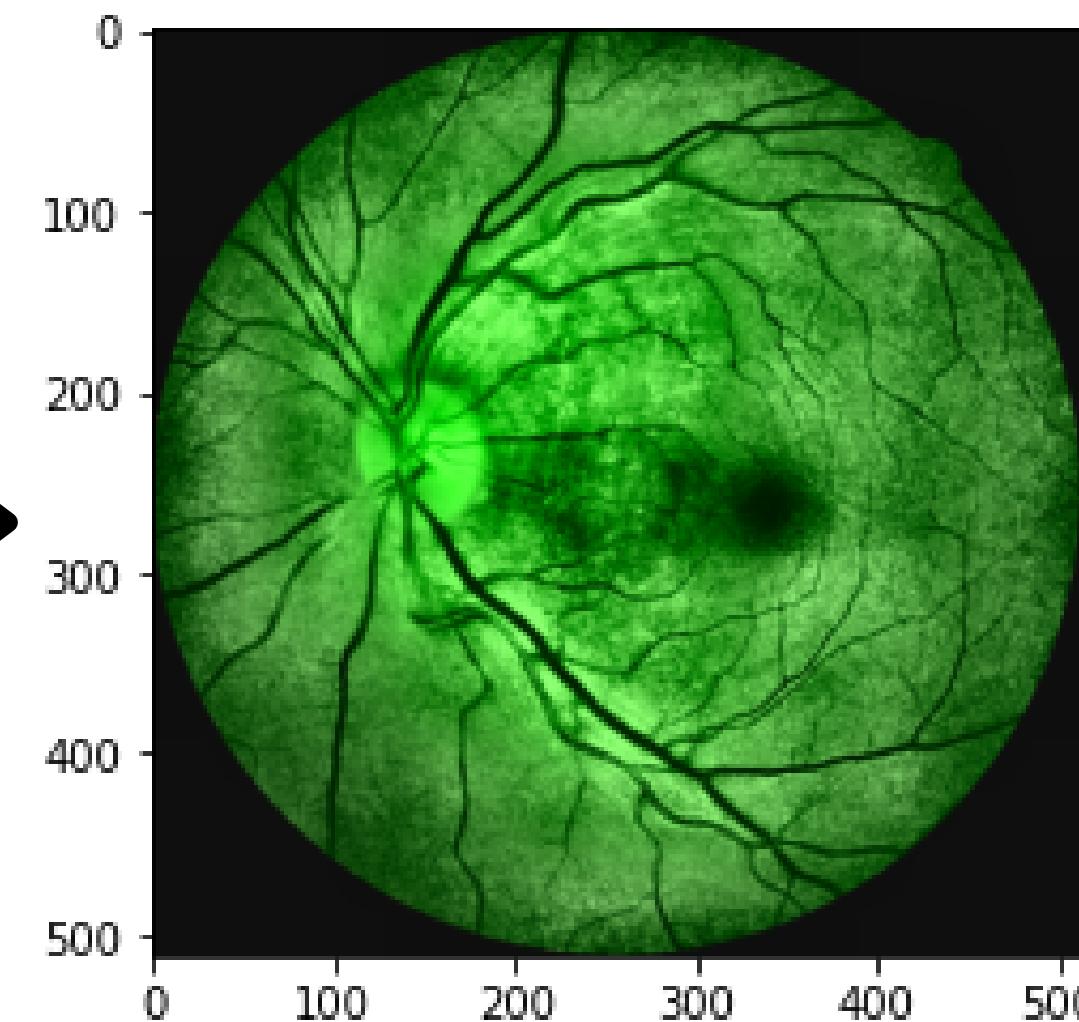
Resized 512 x 512



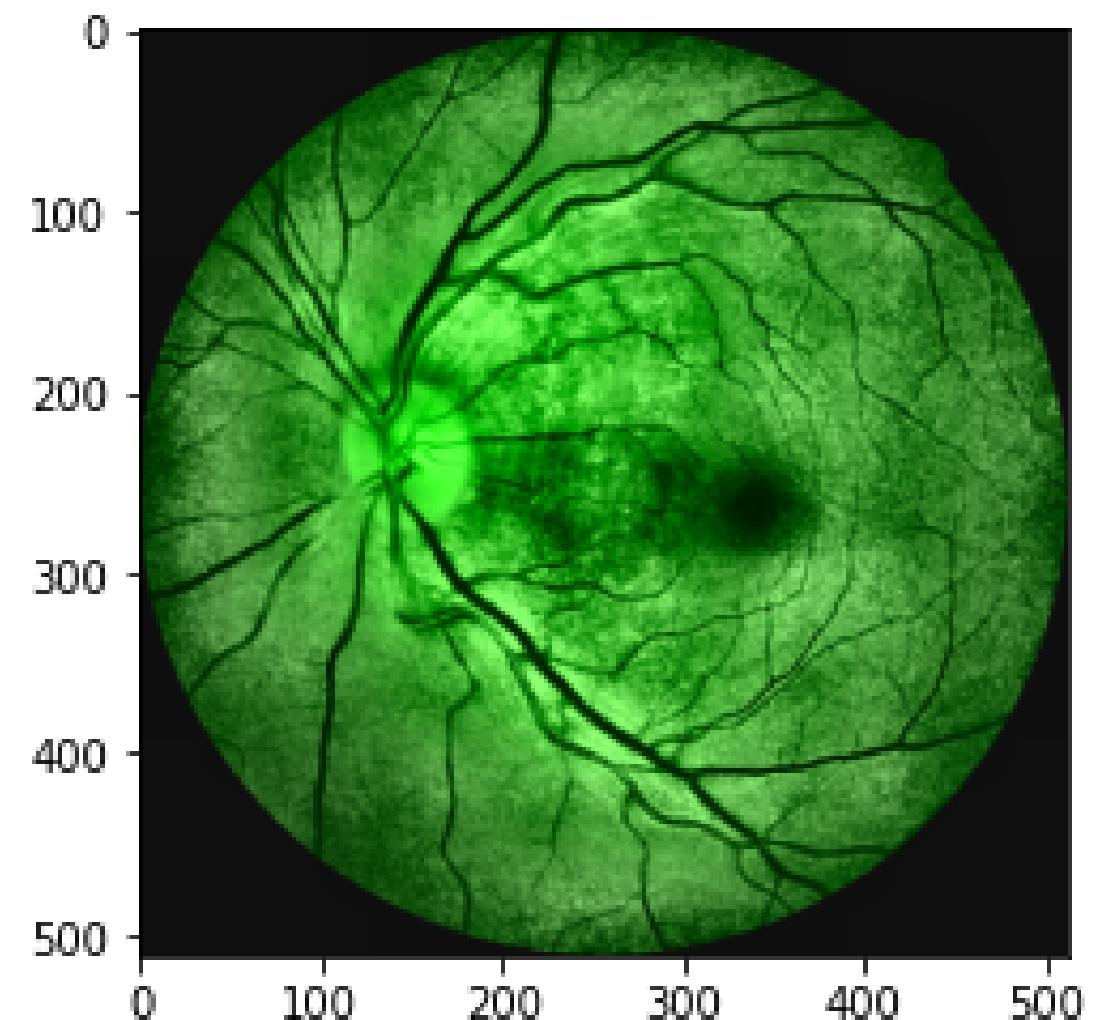
Grayscale Image



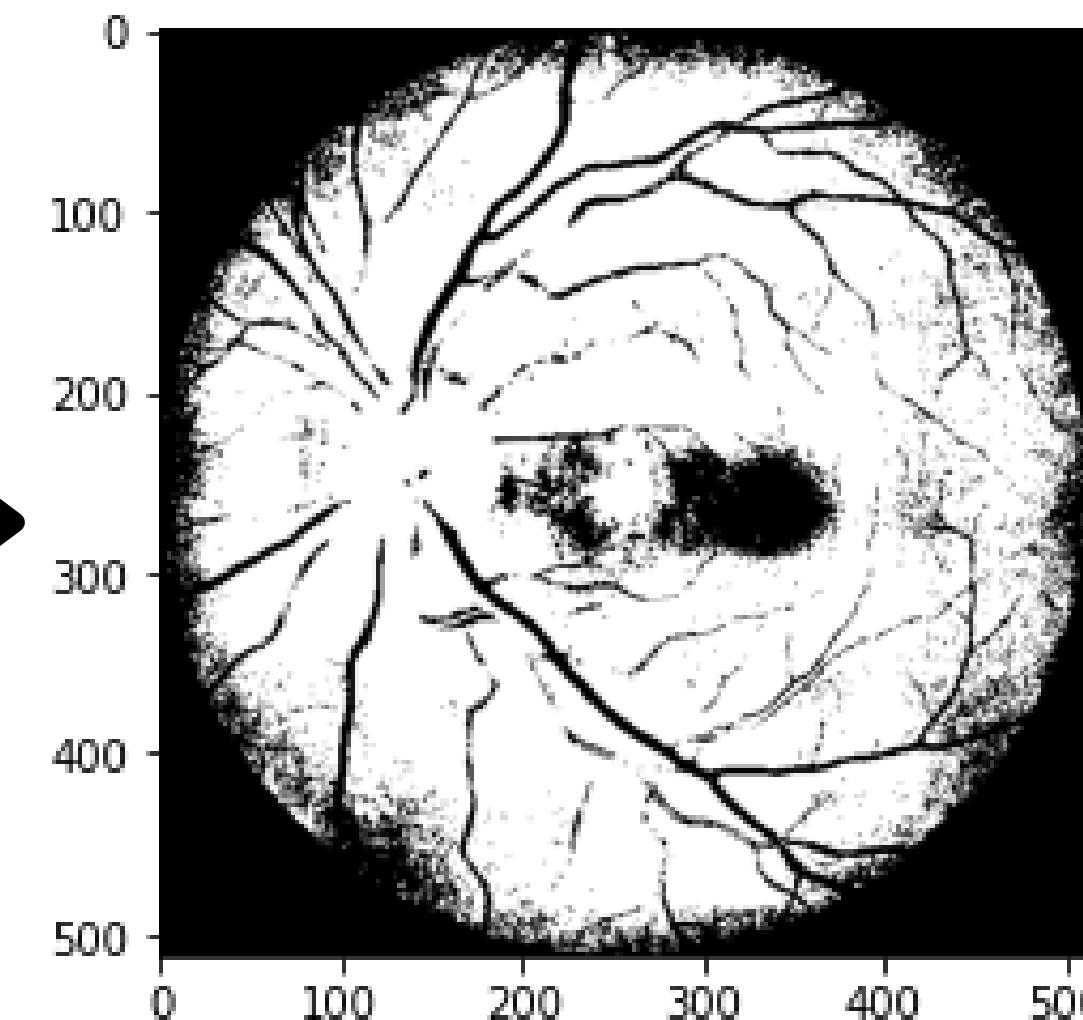
Green Channel



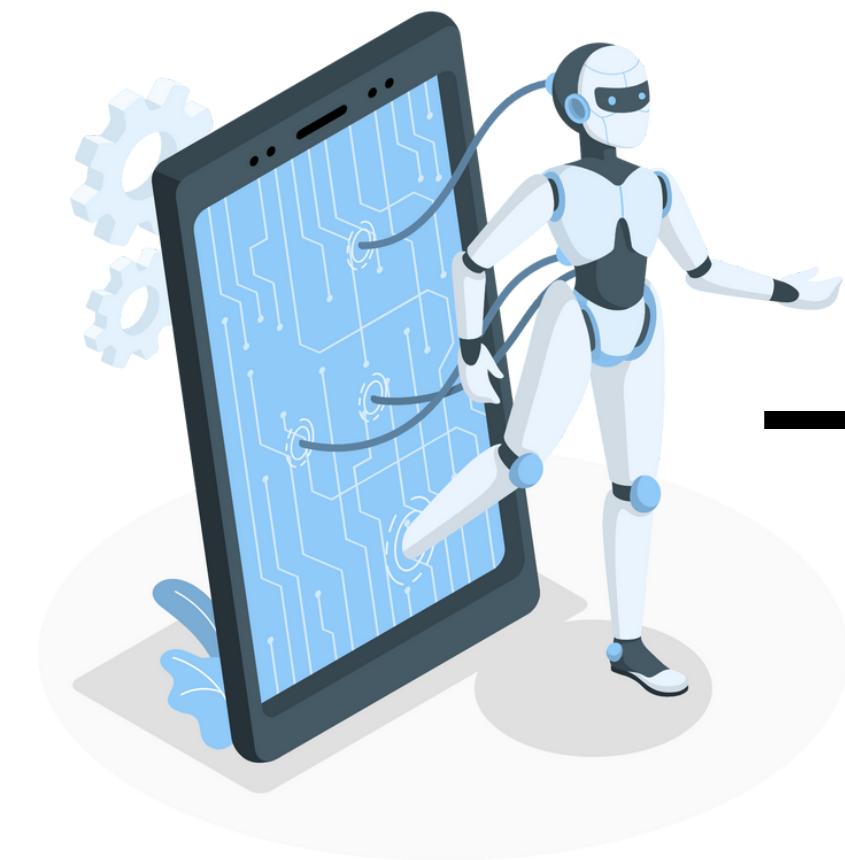
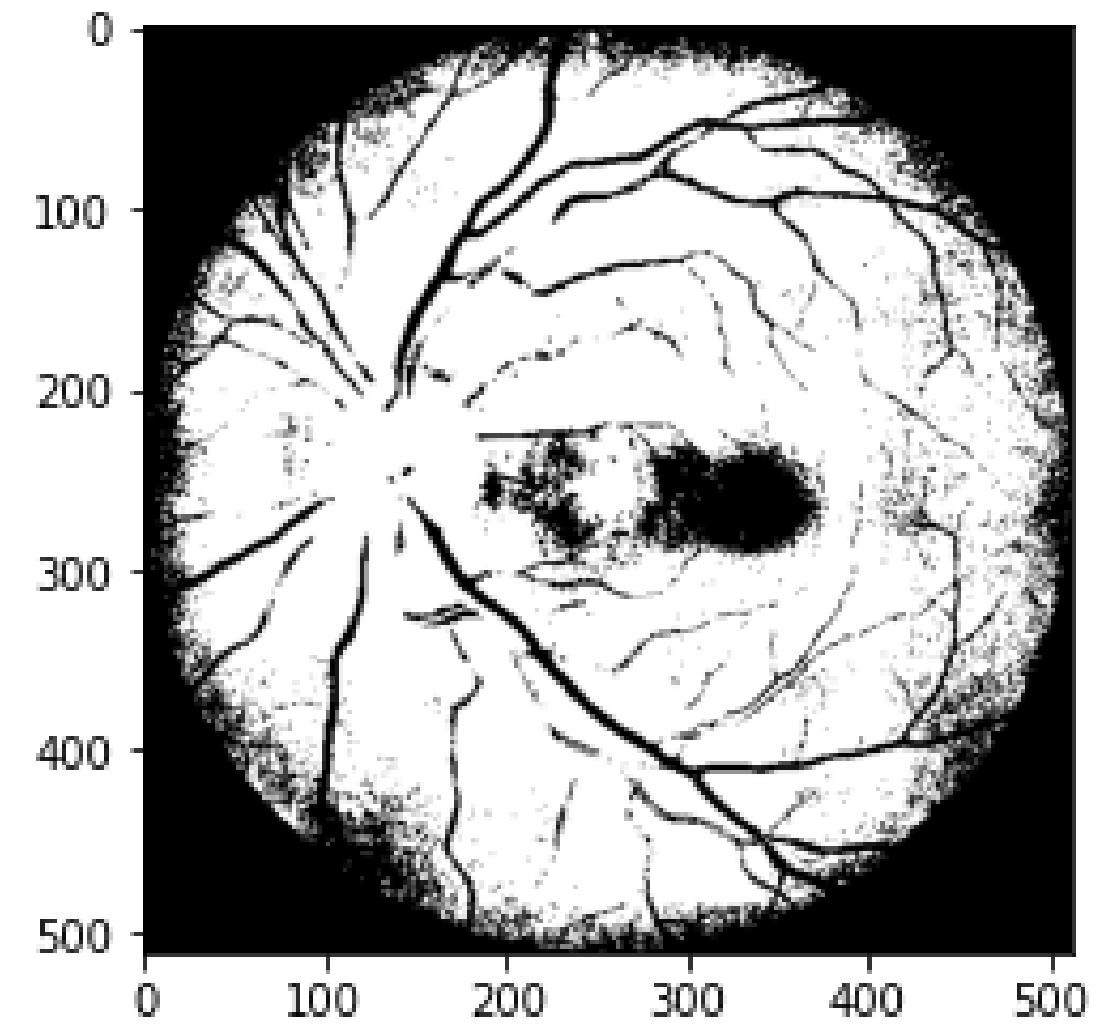
CLAHE Enhanced



Green Channel

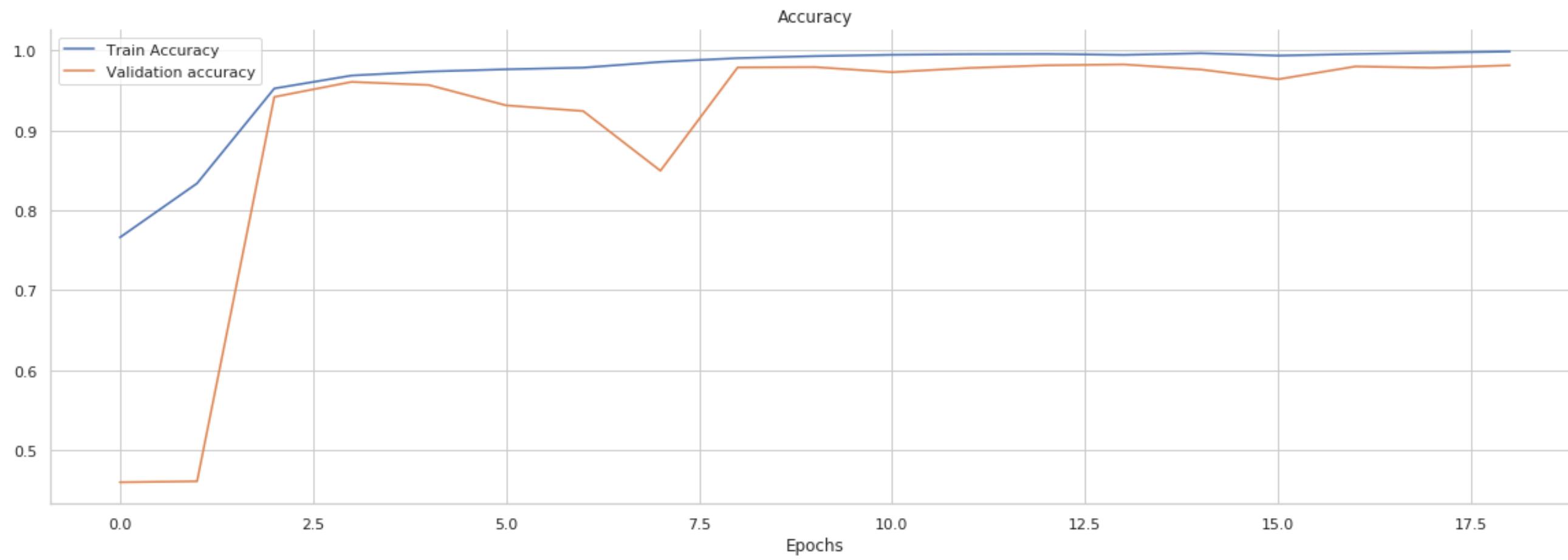


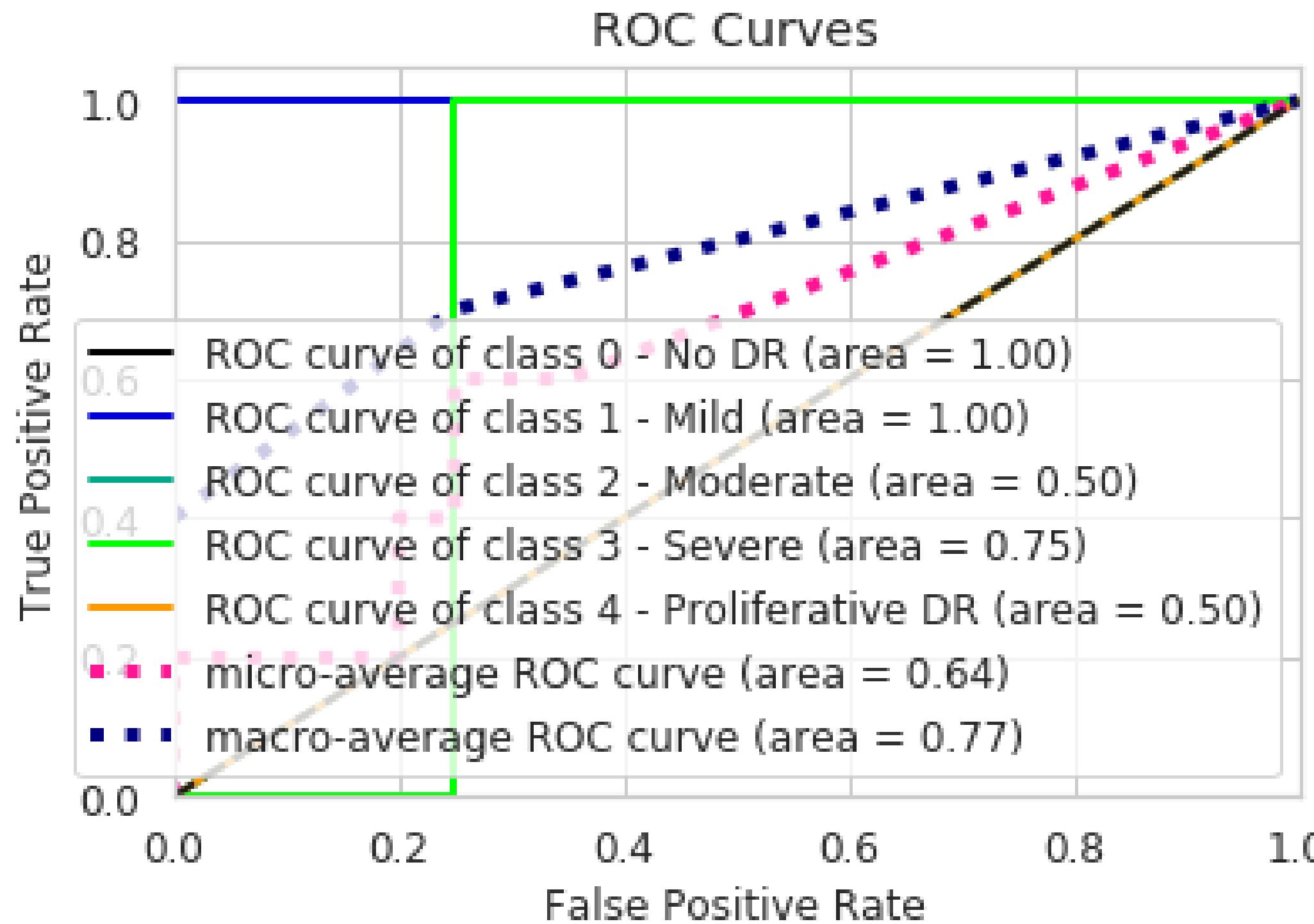
Otsu Thresholder Imaged



Results

Results





User End Product

Home

नेत्र

HOME PREDICT DIAGNOSIS

LOGIN

Experience नेट्रोस्कोपी

Try out our all new revolutionary device
that will help you diagnose Diabetes just
sitting at the comforts of your home
under 1 Dollar!

Test



Predict Page

नेत्र

HOME PREDICT DIAGNOSIS

LOGIN

Predict Diabetes

Please upload a clear Fundus Image using Netrascopy

Upload one video at a time *

Choose File My Video.mp4

Name *

Arshroop

Age *

16

Gender *

Male

Predict

Results Page

नेत्र

HOME PREDICT DIAGNOSIS LOGOUT

Results

YOU HAVE NO DIABETIC RATINOPATHY. No need to worry, just take a balanced diet and avoid access sugar intake.

From 50 test cases you were diagnosed with Proliferated Diabetic Retinopathy in 0 test cases, Mild Diabetic Retinopathy in 21 test cases, Moderate Diabetic Retinopathy in 29, Severe Diabetic Retinopathy in 0, Proliferated Diabetic Retinopathy in 0 test cases.



All Results Page

नेत्र

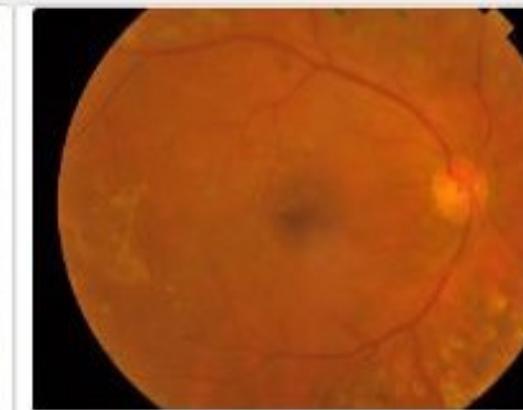
HOME PREDICT DIAGNOSIS LOGOUT

PAST DIAGNOSIS



**YOU HAVE NO
DIABETIC
RATINOPATHY. No
need to worry, just
take a balanced
diet and avoid
access sugar
intake.**

From 4 test cases you were diagnosed with Proliferated Diabetic Retinopathy in 0 test cases, Mild Diabetic Retinopathy in 0 test cases, Moderate Diabetic Retinopathy in 0, Severe Diabetic Retinopathy in 0, Proliferated Diabetic Retinopathy in 0 test cases.



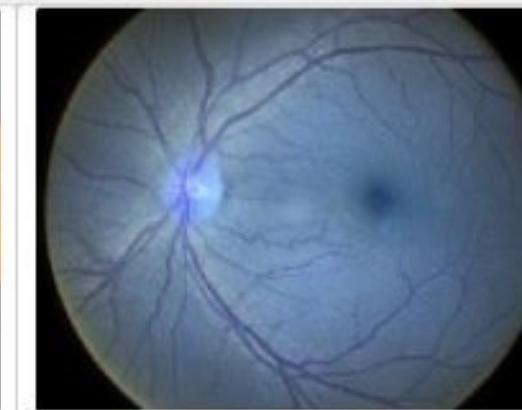
**Have Diabetic
Ratinopathy**

From 4 test cases you were diagnosed with diabetic retinopathy In 4 test cases and you were not diagnosed with diabetic retinopathy in 4 test cases.

November 12, 2022

Admin
Male, 16

[View Image](#)



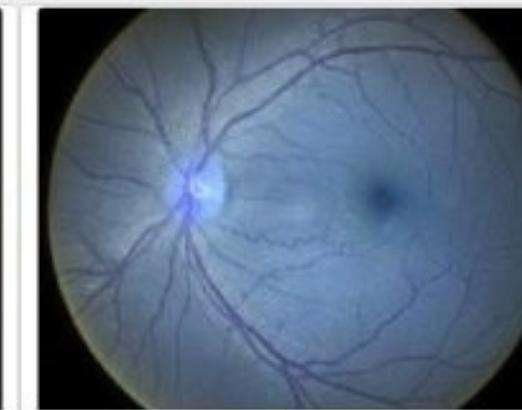
**Have Diabetic
Ratinopathy**

From 4 test cases you were diagnosed with diabetic retinopathy In 4 test cases and you were not diagnosed with diabetic retinopathy in 4 test cases.

November 12, 2022

member
Male, 16

[View Image](#)



**Have Diabetic
Ratinopathy**

From 4 test cases you were diagnosed with diabetic retinopathy In 4 test cases and you were not diagnosed with diabetic retinopathy in 4 test cases.

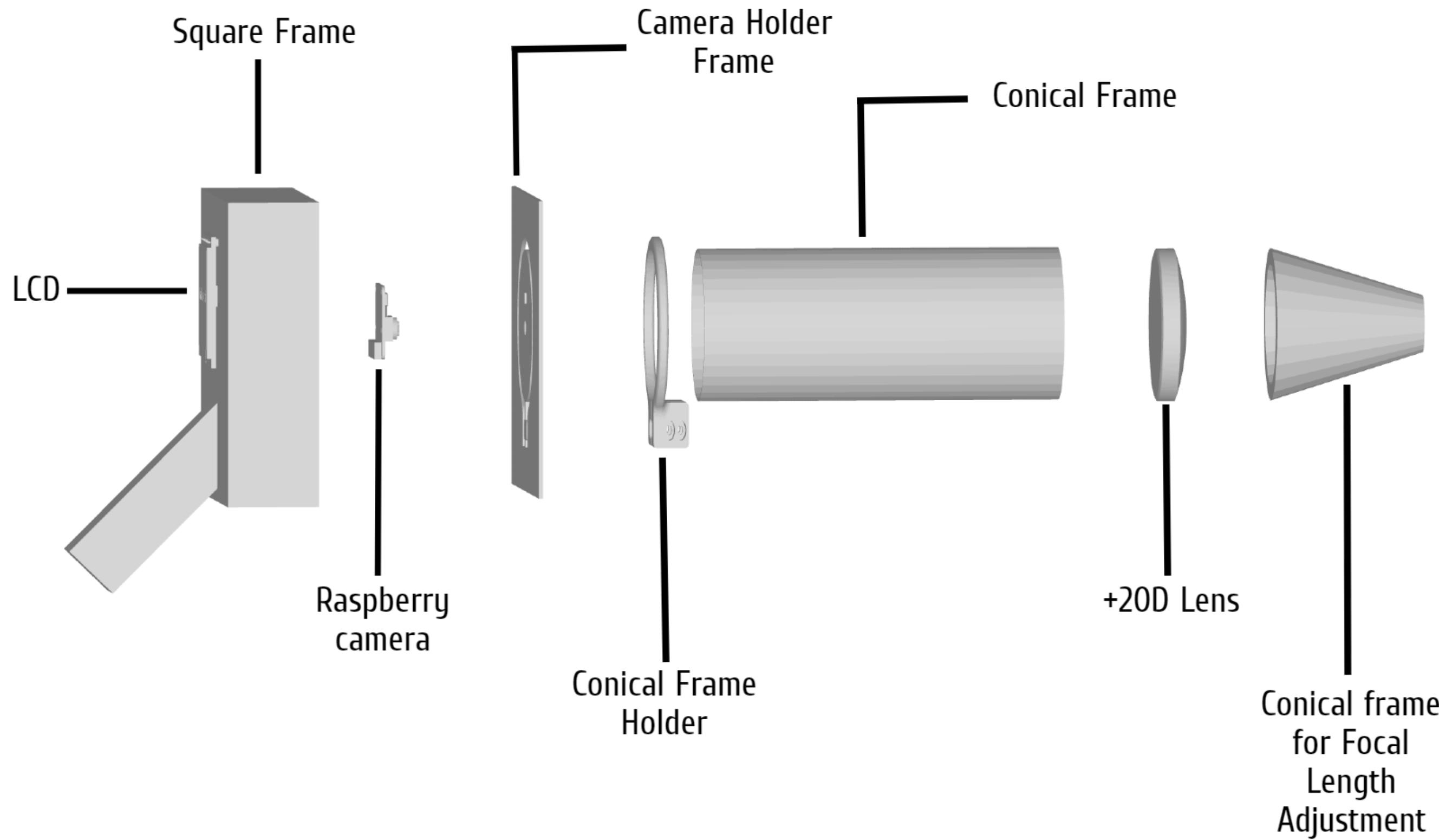
November 12, 2022

Arshroop Singh Saini
Male, 16

[View Image](#)

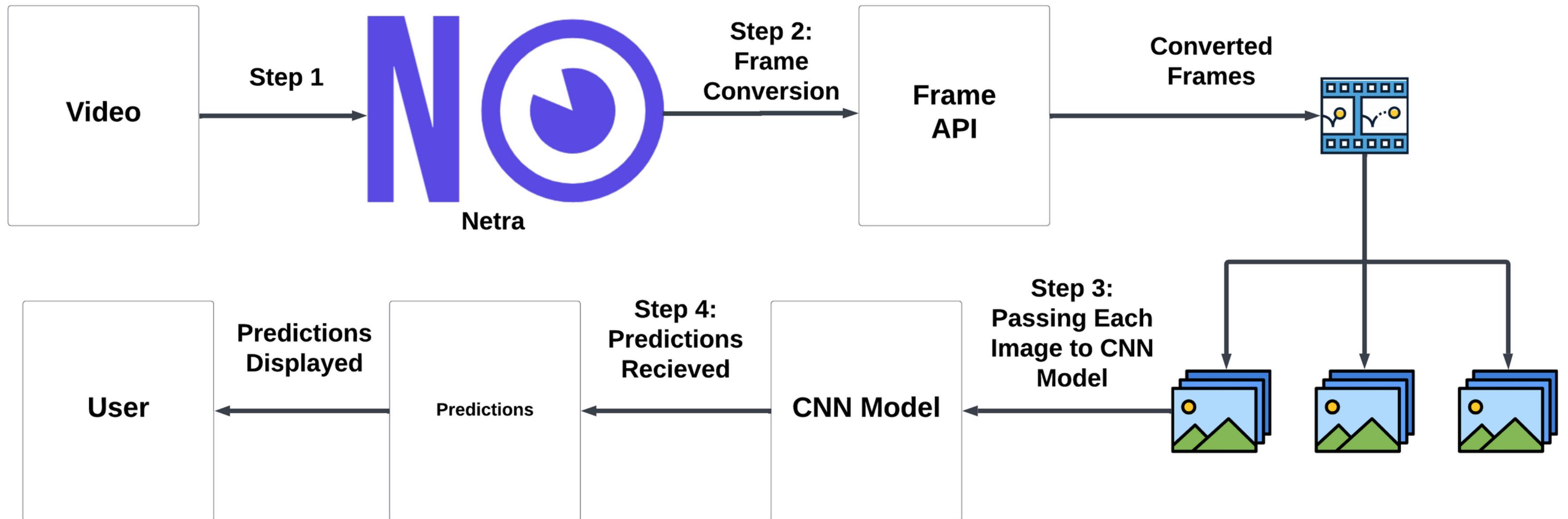
Problem 2

Low Cost Fundus Camera



Using Netra

Low Cost Fundus Camera

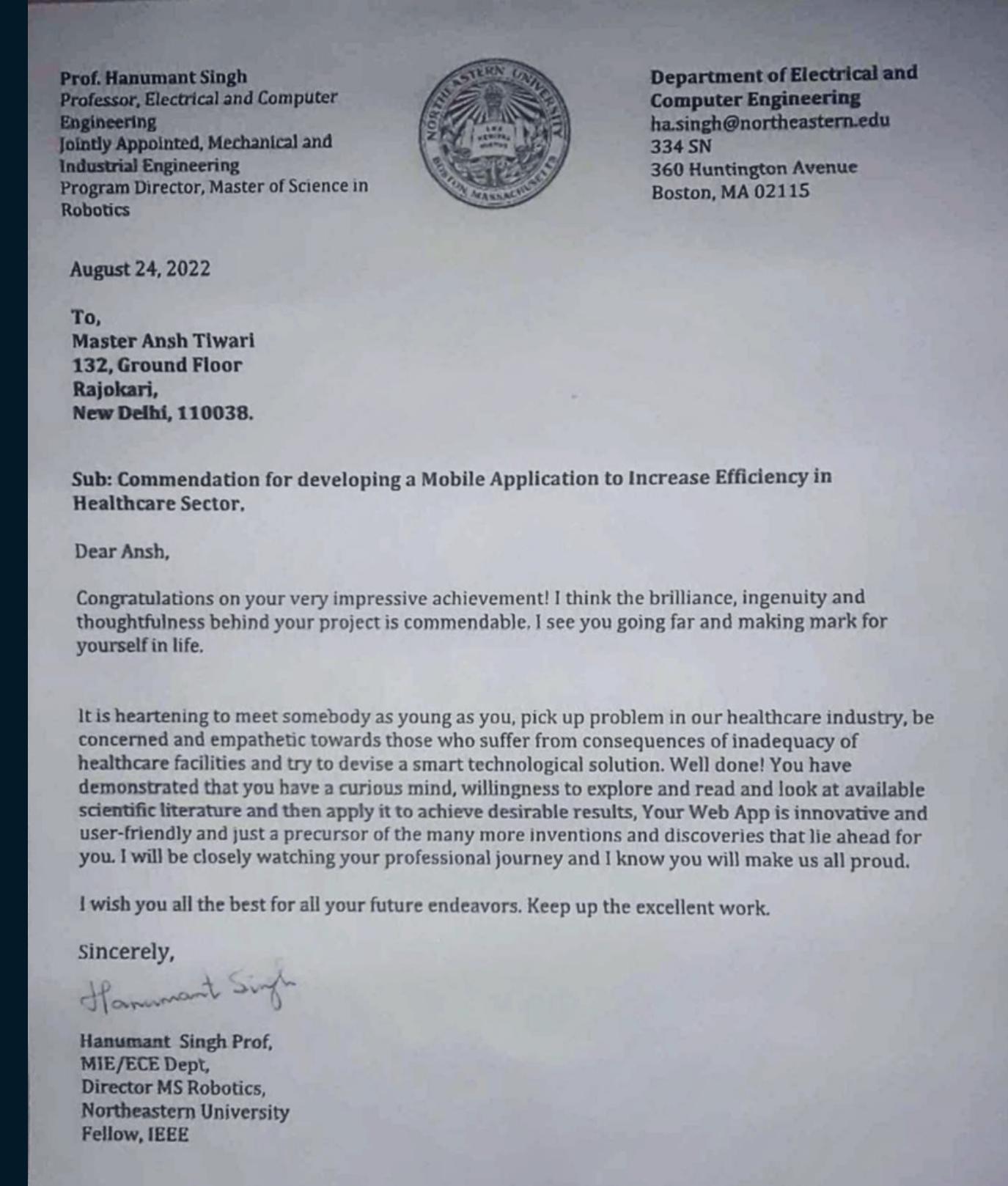


Recognition

Results and Feedbacks



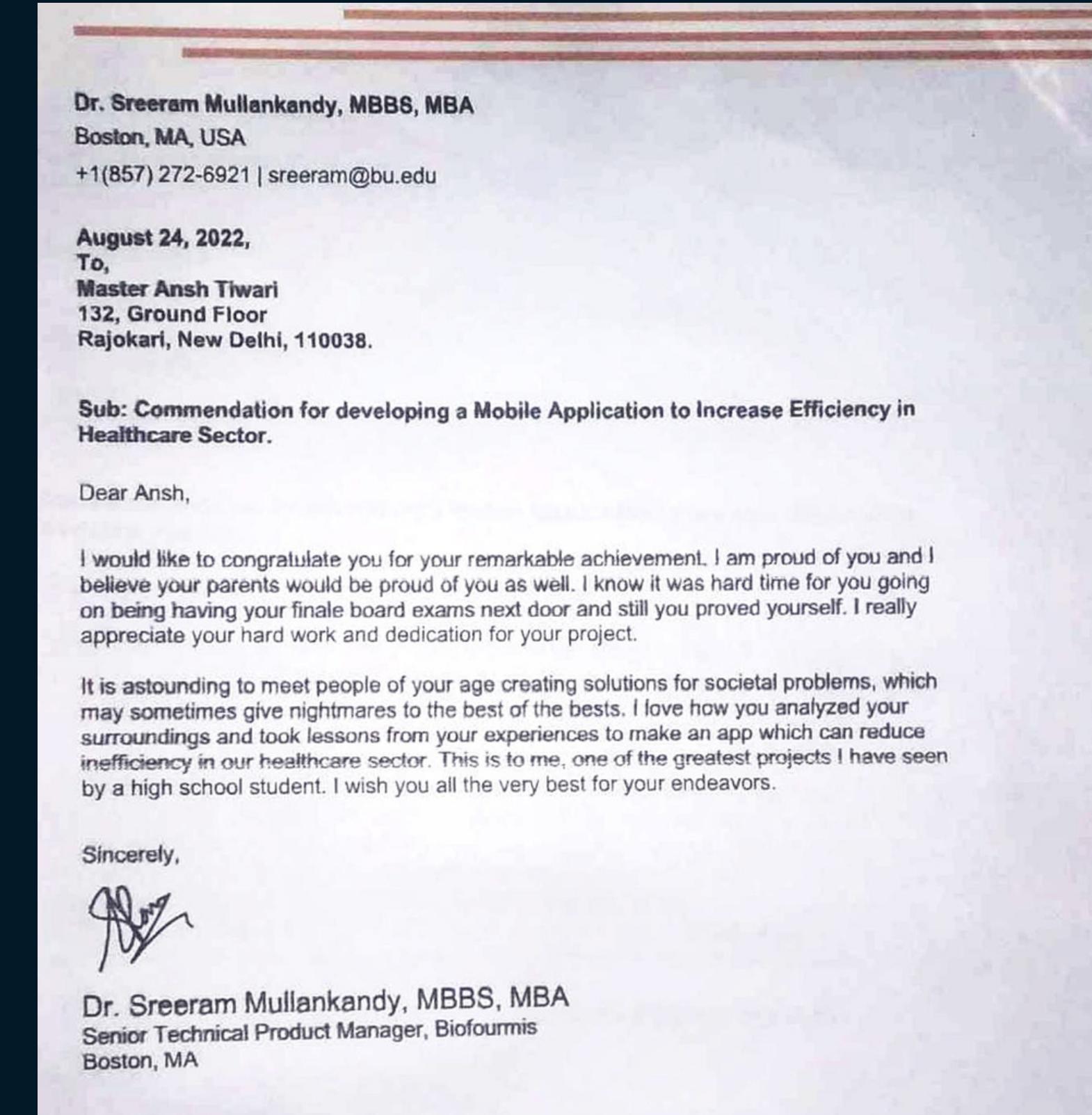
Dr. Hanumant Singh
(Scientist at MIT WHOI)



Results and Feedbacks



Dr. Sreeram M MBBS, MBA, PMP, PMI-ACP



"There is not giant step that does it, it is a lot of little steps"

Thank you!