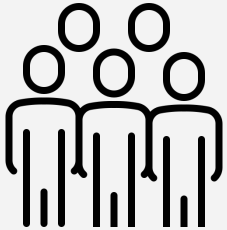
# Diabetic Retinopathy Detection & Classification using Deep Learning

by Amin Zouaoui for Jedha Bootcamp

Jedha

# DIABETES AROUND THE WORLD IN 2021



**537**

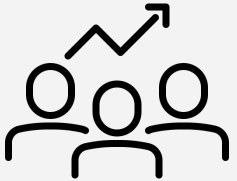
**million**

Adults are living
with diabetes in the world

**100**

**Percent**

Are at risk and need to be
screening once a year



**1**

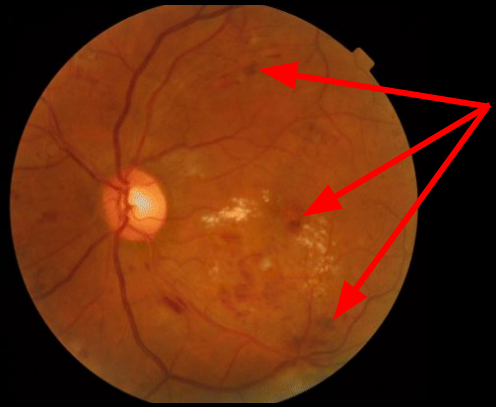
**First**

Fastest growing
cause of blindness

Source: International Diabetes Federation

# DIABETIC RETINOPATHY DIAGNOSIS

HEALTHY




DISEASED

| 0 - No DR | 1 - Mild DR | 2 - Moderate DR | 3 - Severe DR | 4 - Proliferative DR |
|---|---|---|---|---|

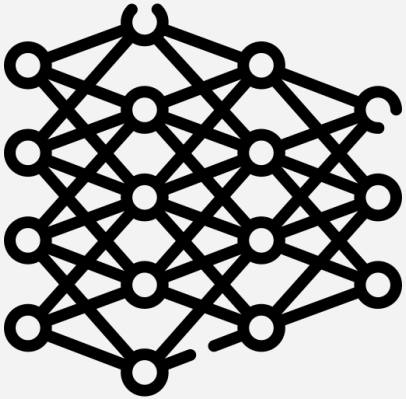
# ARTIFICIAL INTELLIGENCE RESULTS

## STREAMLIT

# DEEP LEARNING MODEL DESCRIPTION

## INPUT

Kaggle Data Set
3662 images &
CSV with labelled images id



## MODEL

Deep Learning CNN
16 Layers
32 Million Parameters

- 0 - No DR
- 1 - Mild DR
- 2 - Moderate DR
- 3 - Severe DR
- 4 - Proliferative DR

## OUTPUT

Detection & Diagnosis
Classification

# WHAT'S NEXT ?

- Get a bigger data set
- Enhance the preprocessing on images
- Improve the model accuracy by using transfer learning
- Display the areas where the model detected DR
- Extend the model to the diagnosis of other diseases

# THANK YOU!
# ANY QUESTIONS ?

linkedin.com/in/aminzouaoui/