***Project 1: Identify if the shape in a 20x20 pixel image (white solid shape on black background) is a rectangle or not***

Approach 1:

The image will be extracted from the following lines:

import cv2

img = cv2.imread*(*"ML\_Data/Untitled.png", 1*)*

An excel sheet is made with a 20 by 20 space set to 0s. In a loop, value of pixels is extracted using

B, G, R = img *[*i, j*]*

As the image is black and white, one of the colors is taken and floor divided by 255 to get 0 or 1. Then it is multiplied by the corresponding weightage stored in the excel sheet and all of the products is added. If the sum is greater than the set bias, the output neuron is fired and user feedback is taken. If the output neuron fires when it shouldn’t, the weightage of white pixels is subtracted by 0.05. If it doesn’t fire when it should, weightage of white pixels is added by 0.05.

Approach 2: (22nd May 2022)

The black pixels, instead of being 0 are now taken as 0.125. when the output neuron fires when it shouldn’t, the weightage of black pixels is added by 0.0125 and when it doesn’t when it should, weight is added by 0.0125.

Failure of Approach 2:

When a very small shape was taken, the output neuron did not show the correct answer no matter how many times the feedback was given as the weightage of the black pixels became large due to their number and took a long time to get changed.