import cv2

import numpy as np

from tensorflow.keras.models import load\_model

from tensorflow.keras.preprocessing import image

class Video(object):

def \_\_init\_\_(self):

self.video = cv2.VideoCapture(0)

self.roi\_start = (50, 150)

self.roi\_end = (250, 350)

#self.model = load\_model('asl\_model.h5') # Execute Local Trained Model

self.model = load\_model('IBM\_Communication\_Model.h5') # Execute IBM Trained Model

self.index=['A','B','C','D','E','F','G','H','I']

self.y = None

def \_\_del\_\_(self):

k = cv2.waitKey(1)

self.video.release()

def get\_frame(self):

ret,frame = self.video.read()

frame = cv2.resize(frame, (640, 480))

copy = frame.copy()

copy = copy[150:150+200,50:50+200]

# Prediction Start

cv2.imwrite('image.jpg',copy)

copy\_img = image.load\_img('image.jpg', target\_size=(64,64))

x = image.img\_to\_array(copy\_img)

x = np.expand\_dims(x, axis=0)

pred = np.argmax(self.model.predict(x), axis=1)

self.y = pred[0]

cv2.putText(frame,'The Predicted Alphabet is: '+str(self.index[self.y]),(100,50),cv2.FONT\_HERSHEY\_SIMPLEX,1,(0,0,0),3)

ret,jpg = cv2.imencode('.jpg', frame)

return jpg.tobytes()