

<b>TEAM ID</b>	<b>PNT2022TMID45340</b>
<b>PROJECT NAME</b>	<b>Real-Time Communication System Powered by AI for Specially Abled</b>

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1  import cv2
2  import numpy as np
3  from tensorflow.keras.models import load_model
4  from tensorflow.keras.preprocessing import image
5  import os
6
7  class Video(object):
8      def __init__(self):
9          self.video = cv2.VideoCapture(0)
10         self.roi_start = (50, 150)
11         self.roi_end = (250, 350)
12         #self.model = load_model('asl_model.h5') # Execute Local Trained Model
13         self.model = load_model('realtime.h5') # Execute IBM Trained Model
14         self.index=['A','B','C','D','E','F','G','H','I']
15         self.y = None
16     def __del__(self):
17         k = cv2.waitKey(1)
18
19         self.video.release()
20     def get_frame(self):
21         ret,frame = self.video.read()
22         frame = cv2.resize(frame,(640,480))
23         copy = frame.copy()
24         copy = copy[150:150+200,50:50+200]
25         # prediction starts
26         cv2.imwrite('image.jpg',copy)
27         copy_img = image.load_img('image.jpg', target_size=(64,64,3))
28         x = image.img_to_array(copy_img)
29         x = np.expand_dims(x, axis=0)
30         pred = np.argmax(self.model.predict(x), axis=1)
31         self.y = pred[0]
32         cv2.putText(frame,'The Predicted Alphabet is: '+str(self.index[self.y]),(10,40),cv2.FONT_HERSHEY_SIMPLEX,1,(0,0,0))
33         ret,jpg = cv2.imencode('.jpg', frame)
34         return jpg.tobytes()

```