IBM-Project-28638-1660114698

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Project Description

The project deals on building an application which helps the specially challenged people to communicate between them and the common people. Communication between a person with hearing/speech impairment and a normal person has always been a challenging task. This application tries to reduce the barrier of communication by developing an assistive application for specially challenged people.

Image Augmentation:

Image Augmentation

```
[ ] from tensorflow.keras.preprocessing.image import ImageDataGenerator
    print("This dataset has been created and uploaded by IBM-TeamID-IBM-Project-2475-1658472446")

    This dataset has been created and uploaded by IBM-TeamID-IBM-Project-2475-1658472446

[ ] train_datagen = ImageDataGenerator(rescale=1./255,zoom_range=0.2,horizontal_flip=True, vertical_flip=False)

[ ] test_datagen= ImageDataGenerator(rescale=1./255)
```

Applying Convolution ,Dense Layers:

```
[ ] from tensorflow.keras.layers import Dense, Convolution2D, MaxPooling2D, Flatten
```

```
model = Sequential()
```

```
[ ] model.add(Convolution2D(32, (3,3), input_shape=(100,100,3),activation = 'relu')) #Feature map
```

```
[ ] model.add(MaxPooling2D(pool_size = (2,2))) #Pooled matrix
```

```
[ ] model.add(Flatten())
```

```
[ ] model.summary()
```

```
Model: "sequential"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 conv2d (Conv2D)             (None, 98, 98, 32)        896

 max_pooling2d (MaxPooling2D  (None, 49, 49, 32)       0
 )

 flatten (Flatten)           (None, 76832)             0
```

Tested Model:

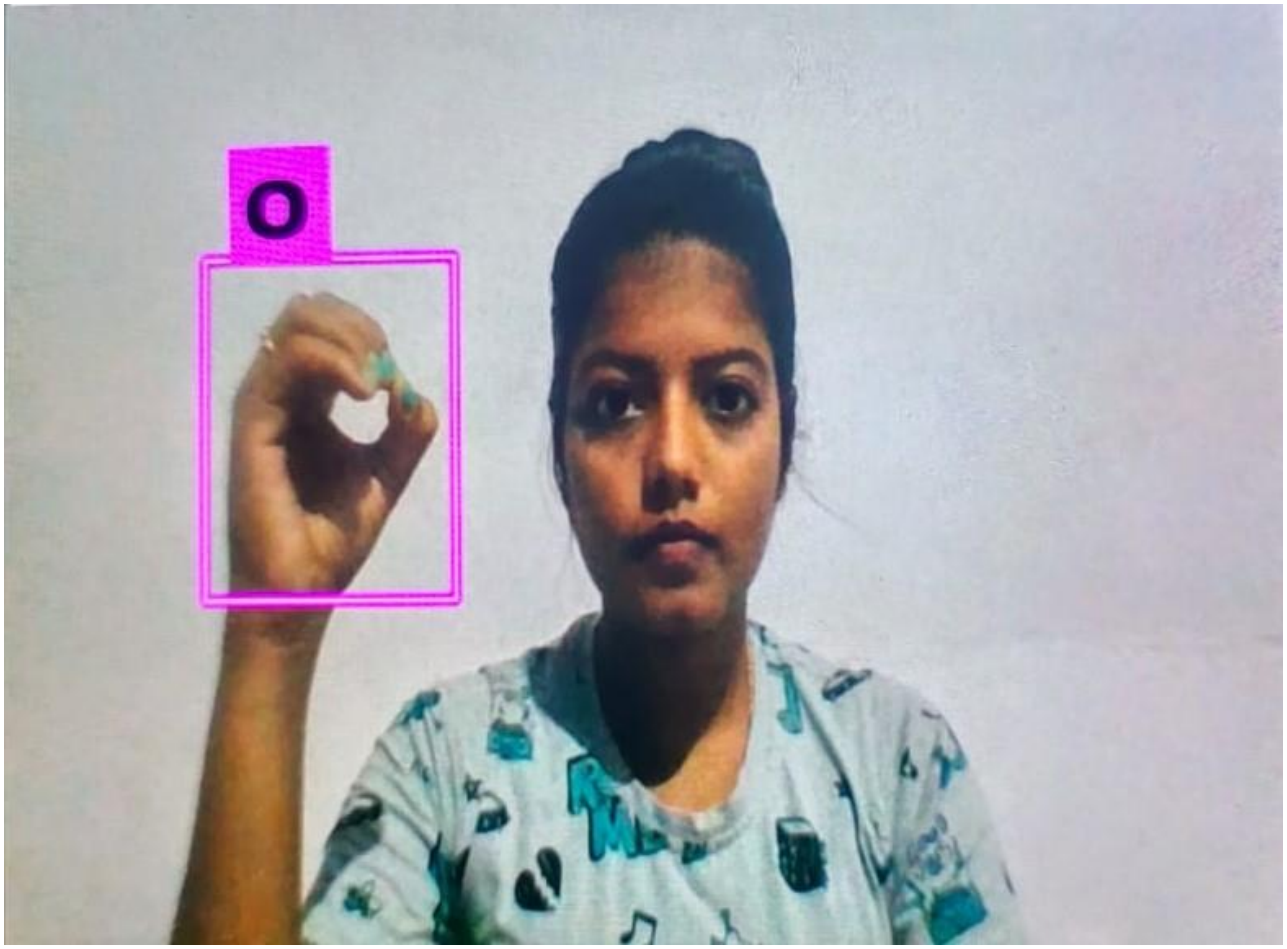
```
[ ] img
```

```
[ ] x=image.img_to_array(img)

[ ] x=np.expand_dims(x,axis=0)

[ ] y=np.argmax(model.predict(x),axis=1)
    1/1 [==============================] - 0s 56ms/step

[ ] y
    array([1])

    index=['A','B','C','D','E','F','G','H','I','J','K','L','M','N','O','P','Q','R','S','T','U','V','W','X','Y','Z']

[ ] index[y[0]]
    'B'
```

Testing:

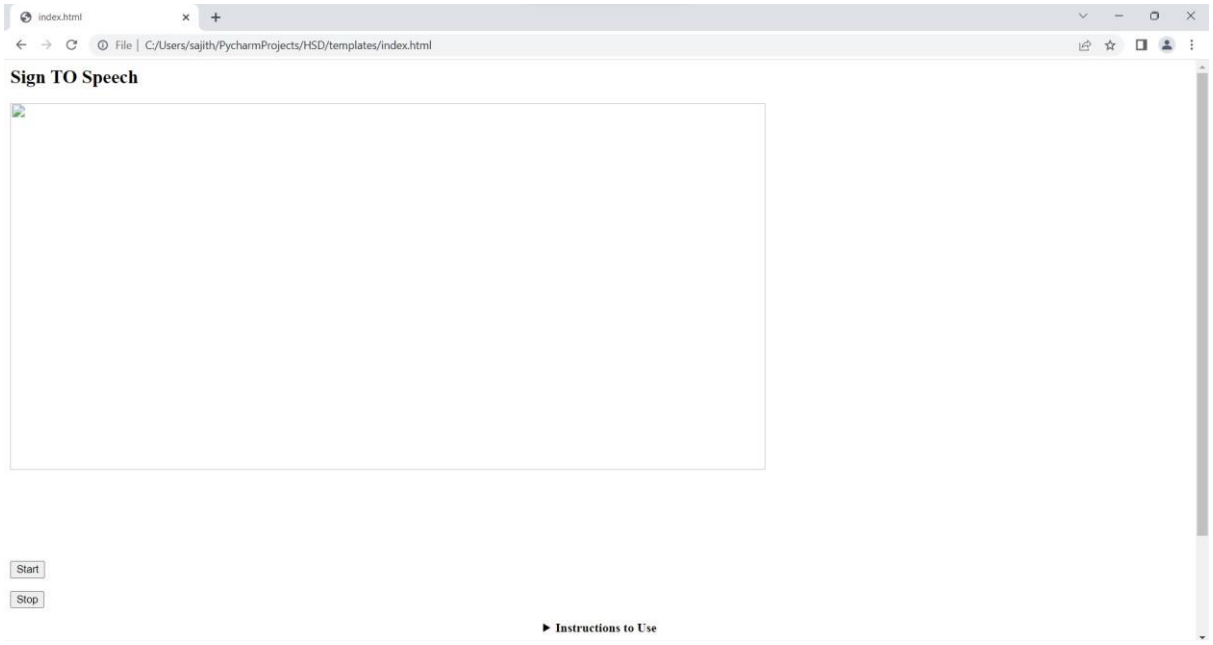

O

Saving text:

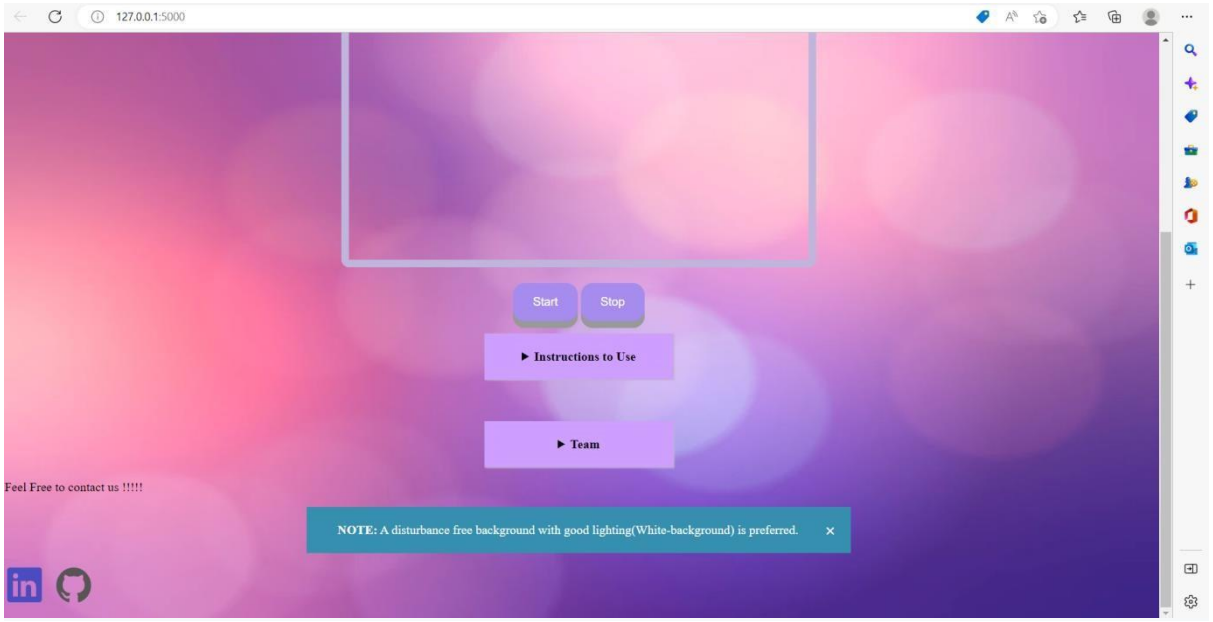


Building Flask Application:

Without Css:



With Css:



Flask Output:


127.0.0.1:5000
Sign Language TO Speech
Start
Stop
▶ Instructions to Use