

Testing the model

```
import numpy as np

from tensorflow.keras.models import load_model
from tensorflow.keras.preprocessing import image

model=load_model('asl_model_84_54.h5')

img=image.load_img(r'E:\Projects\SmartBridge\ModelGen\Dataset\test_set\D\2.png',
                    target_size=(64,64))

img

x=image.img_to_array(img)

x.ndim

3

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

x.ndim

4

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

1/1 [=====] - 0s 88ms/step

pred

array([3], dtype=int64)

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

print(index[pred[0]])

D

Open CV

import cv2

img=cv2.imread(r'E:\Projects\SmartBridge\ModelGen\Dataset\test_set\C\2.png',1)

img1=cv2.imread(r'E:\Projects\SmartBridge\ModelGen\Dataset\test_set\B\2.png',0)

print(img.shape)

(64, 64, 3)

# img=cv2.imread(r'C:\Users\LEGION\Desktop\Project Externship\Dataset\test_set\B\2.png',1)
```

```
cv2.imshow('image',img)
```

```
cv2.waitKey(0)
```

```
cv2.destroyAllWindows()
```

CNN Video Analysis

```
import cv2
```

```
import numpy as np
```

```
from tensorflow.keras.models import load_model
```

```
from tensorflow.keras.preprocessing import image
```

```
model=load_model('asl_model_84_54.h5')
```

```
video=cv2.VideoCapture(0)
```

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

```
while 1:
```

```
    succes,frame=video.read()
```

```
    cv2.imwrite('image.jpg',frame)
```

```
    img=image.load_img('image.jpg',target_size=(64,64))
```

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

```
    x=np.expand_dims(x,axis=0)
```

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

```
    y=pred[0]
```

```
    copy = frame.copy()
```

```
    cv2.rectangle(copy, (320, 100), (620,400), (255,0,0), 5)
```

```
    cv2.putText(frame,'The Predicted Alphabet is:
```

```
'+str(index[y]),(100,100),cv2.FONT_HERSHEY_SIMPLEX,1,(0,0,0),4)
```

```
    cv2.imshow('image',frame)
```

```
    if cv2.waitKey(1) & 0xFF == ord('q'):
```

```
        break
```

```
video.release()
```

```
cv2.destroyAllWindows()
```

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KeyboardInterrupt          Traceback (most recent call last)
e:\Projects\SmartBridge\ModelGen\Externship Project.ipynb Cell 44' in ()
      7 index=['A','B','C','D','E','F','G','H','I']
      8 while 1:
----> 9     succes,frame=video.read()
     10     cv2.imwrite('image.jpg',frame)
     11     img=image.load_img('image.jpg',target_size=(64,64))

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