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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---------------------------------------------------------------------------
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KeyboardInterrupt                         Traceback (most recent call
last)
e:\Projects\SmartBridge\ModelGen\Externship Project.ipynb Cell 44' in
<cell line: 8>()
      <a
href='vscode-notebook-cell:/e%3A/Projects/SmartBridge/ModelGen/Externs
hip%20Project.ipynb#ch0000043?line=6'>7</a>
index=['A','B','C','D','E','F','G','H','I']
      <a
href='vscode-notebook-cell:/e%3A/Projects/SmartBridge/ModelGen/Externs
hip%20Project.ipynb#ch0000043?line=7'>8</a> while 1:
----> <a
href='vscode-notebook-cell:/e%3A/Projects/SmartBridge/ModelGen/Externs
hip%20Project.ipynb#ch0000043?line=8'>9</a>
succes,frame=video.read()
     <a
href='vscode-notebook-cell:/e%3A/Projects/SmartBridge/ModelGen/Externs
hip%20Project.ipynb#ch0000043?line=9'>10</a>
cv2.imwrite('image.jpg',frame)
     <a
href='vscode-notebook-cell:/e%3A/Projects/SmartBridge/ModelGen/Externs
hip%20Project.ipynb#ch0000043?line=10'>11</a>
img=image.load_img('image.jpg',target_size=(64,64))

KeyboardInterrupt:

The Kernel crashed while executing code in the the current cell or a
previous cell. Please review the code in the cell(s) to identify a
possible cause of the failure. Click <a
href='https://aka.ms/vscodeJupyterKernelCrash'>here</a> for more info.
View Jupyter <a href='command:jupyter.viewOutput'>log</a> for further
details.
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