Testing the model

```python
import numpy as np
from tensorflow.keras.models import load_model
from tensorflow.keras.preprocessing import image
```

```python
model=load_model('asl_model_84_54.h5')
img=image.load_img(r'D:\IBM\Dataset\test_set\D\2.png',
                   target_size=(64,64))
```

```python
img
```



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

```python
x.ndim
```

        3

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

```python
x.ndim
```

        4

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

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

```python
pred
```

        array([3], dtype=int64)

```python
index=['A','B','C','D','E','F','G','H','I']
print(index[pred[0]])
```

        D

Open CV

```python
import cv2
```

```
img=cv2.imread(r'D:\IBM\Dataset\test_set\C\2.png',1)
```

```
img1=cv2.imread(r'D:\IBM\Dataset\test_set\B\2.png',0)
```

```
print(img.shape)
```

```
    (64, 64, 3)
```

```
# img=cv2.imread(r'D:\IBM\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_HERSH
    cv2.imshow('image',frame)
    if cv2.waitKey(1) & 0xFF == ord('q'):
        break
video.release()
cv2.destroyAllWindows()
```

```
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