# # Driver state detection using VGG16 model

In [2]:
```python
import numpy as np
import cv2
import urllib.request
import matplotlib.pyplot as plt
from tensorflow.keras.models import load_model
```

In [3]:
```python
classes=['Safe driving','Texting-right','Talking on phone-right','Texting-left','Talking on phone-left','Operati
         'Drinking','Reaching behind','Hair and makeup','Talking to passenger']
```

In [ ]:
```python
# Using web camera
```

In [4]:
```python
model=load_model(r'C:\Users\Jaswanth Reddy\Downloads\driverstate_detection_vgg16.h5')
```

In [6]:
```python
capture=cv2.VideoCapture(0)
ip_address='https://192.168.43.1:8080/video'
capture.open(ip_address)
while(True):
    _,frame=capture.read()

    frame1=cv2.resize(frame,(224,224))
    frame2=np.reshape(frame1,(1,224,224,3))
    pred=model.predict(frame2)
    print(classes[np.argmax(pred)])
    cv2.putText(frame,classes[np.argmax(pred)],(0,200),cv2.FONT_HERSHEY_SIMPLEX,1,(255,0,0),2)
    cv2.imshow('captured image',frame)
    if (cv2.waitKey(1) & 0xFF == ord('q')):
        break
capture.release()
cv2.destroyWindows()
```

```
Hair and makeup
Reaching behind
Reaching behind
Operating the radio
Operating the radio
Operating the radio
Operating the radio
Operating the radio
Operating the radio
Operating the radio
Hair and makeup
Hair and makeup
Hair and makeup
Hair and makeup
Hair and makeup
Hair and makeup
Hair and makeup
Reaching behind
Hair and makeup
Reaching behind
```

In [ ]:

```python
# Using mobile camera


import urllib.request
capture=cv2.VideoCapture(0)
URL='https://192.168.43.1:8080/video'
capture.open(URL)
while(True):
    _,frame=capture.read()

    frame1=cv2.resize(frame,(224,224))
    frame2=np.reshape(frame1,(1,224,224,3))
    pred=model.predict(frame2)
    print(classes[np.argmax(pred)])
    cv2.putText(frame,classes[np.argmax(pred)],(0,200),cv2.FONT_HERSHEY_SIMPLEX,1,(255,0,0),2)
    cv2.imshow('captured image',frame)
    if (cv2.waitKey(1) & 0xFF == ord('q')):
        break
capture.release()
cv2.destroyWindows()
```

```
Hair and makeup
Hair and makeup
Hair and makeup
Hair and makeup

Hair and makeup
Hair and makeup
Hair and makeup
Texting-left
Texting-left
Texting-left
Hair and makeup
Hair and makeup
Hair and makeup
Hair and makeup
Talking to passenger
Talking to passenger
Talking to passenger
Talking to passenger
Hair and makeup
Hair and makeup
```

In [5]:
```python
capture.release()
```

In [ ]:
```python
capture.release()
cv2.destroyWindows()
```

In [ ]: