

Team ID	PNT2022TMID20850
Project Name	Emerging Methods for Early Detection of Forest Fires

Sending Alert Message

To play an alerting sound we need to install "playsound" library.

To install this library, open anaconda prompt and execute the below command.

Type "**pip install playsound**" click enter. Combining all codes

```
#import opencv library
import cv2
#import numpy
import numpy as np
#import image and load_model function from keras
from keras.preprocessing import image
from keras.models import load_model
#import Client from twilio API
from twilio.rest import Client
#import playsound package
from playsound import playsound

#load the saved model
model = load_model(r'forest1.h5')
#define video
video = cv2.VideoCapture(0)
#define the features
name = ['forest','with fire']
```

```
while(1):
    success, 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 = model.predict_classes(x)
    n = pred[0]
```

```

pred = model.predict_classes(x)
if pred[0]==1:
    #twilio account ssid
    account_sid = 'ACa56253bf3f2e2918b550b1c2bfc05353'
    #twilio account authentication token
    auth_token = 'a10cb957a1b8bc17abba1e1de952d4b4'
    client = Client(account_sid, auth_token)
    message = client.messages \
        .create(
            body='Forest Fire is detected, stay alert',
            #use twilio free number
            from_=' +150351xxxx',
            to='+919160xxxx')
    print(message.sid)
    print('Fire Detected')
    print ('SMS sent!')
    playsound(r'C:\Users\DELL\Downloads\Tornado_Siren_II-Delilah-0.mp3')

```

```

else:
    print("No Danger")
    #break
    cv2.imshow("image",frame)
    if cv2.waitKey(1) & 0xFF == ord('a'):
        break

    video.release()
    cv2.destroyAllWindows()

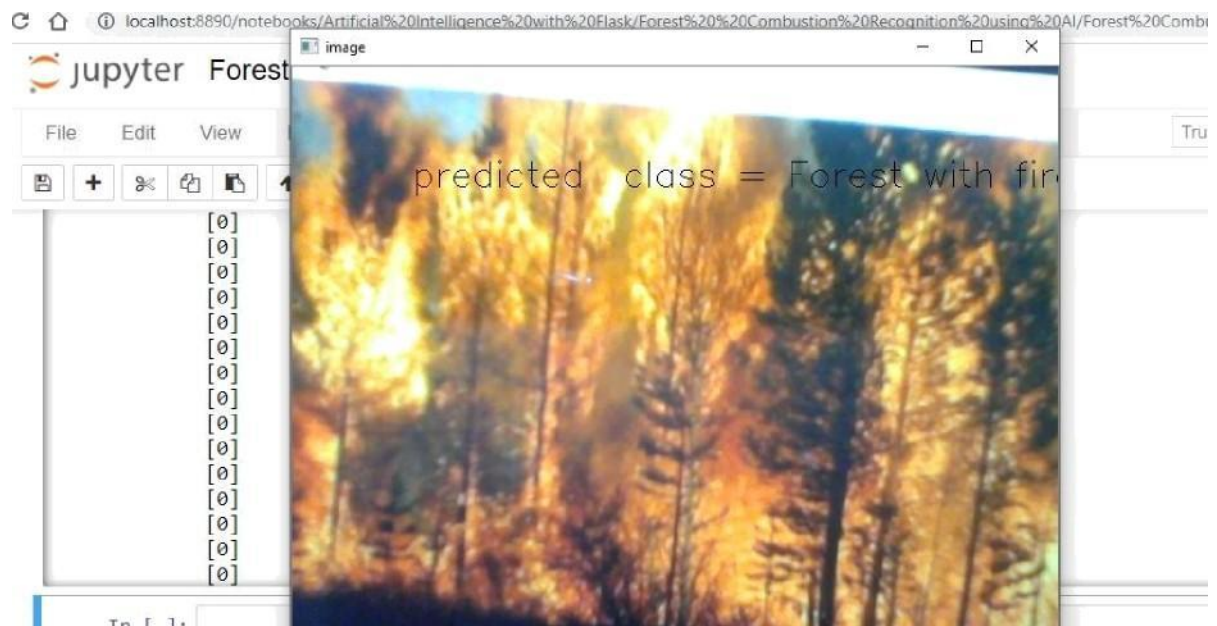
```

Once you run the above code, after loading your model, and the label names (classes) that you have considered in the project, and also the authentication token and Account SID from Twilio, This will open one video frame pop up on your desktop/laptop screen.

Now we provide with different test images of a forest fire or normal forest images, the model detects, if there is any forest fire in the video stream. If the forest fire is detected then an alert message will be sent to higher authorities and with a sound, else it returns no danger.

You can see the output in the below

images. You can see the output in the console.



no danger
[0]

no danger

no danger

SMf7d7e45c610646738a0ed86c87c9a70a
Fire Detected
SMS sent!