

Emerging Methods For Early Detection OF Forest Fire

Project Development Phase

Sprint 3

Team ID:PNT2022TMID46642

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In [19]:

```
from google.colab import drive
drive.mount('/content/drive')
```

Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=True).

In []:

In [41]:

```
import cv2
import numpy as np
from google.colab.patches import cv2_imshow
from matplotlib import pyplot as plt
import librosa
from matplotlib import pyplot as plt
from PIL import Image
#import load model from keras.model
from keras.models import load_model
#import image from keras
from tensorflow.keras.preprocessing import image
from keras.models import load_model
# Create a VideoCapture object and read from input file
# If the input is the camera, pass 0 instead of the video file name
cap =
cv2.VideoCapture('/content/drive/MyDrive/Dataset/video/forestfire1.mp4')

# Check if camera opened successfully
if (cap.isOpened() == False):
    print("Error opening video stream or file")

# Read until video is completed
while (cap.isOpened()):
    # Capture frame-by-frame
    if ret == True:
        x=image.img_to_array(frame)
        #expand the image shape
        x=np.expand_dims(x,axis=0)
        model=load_model("/content/drive/MyDrive/archive(2)/forest1.h5")
        cv2_imshow(frame)
        pred=model.predict(x)
        pred = int(pred[0][0])
        pred
        int(pred)
        if pred==0:
```

```
        print('Forest fire')
        break
    else:
        print("no danger")
        break

# When everything done, release the video capture object
cap.release()

# Closes all the frames
cv2.destroyAllWindows()
```



1/1 [=====] - 0s 228ms/step

Forest fire

In [42]:

```
pip install twilio
```

Looking in indexes: <https://pypi.org/simple>, <https://us-python.pkg.dev/colab-wheels/public/simple/>

Requirement already satisfied: twilio in /usr/local/lib/python3.7/dist-packages (7.15.2)
Requirement already satisfied: requests>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from twilio) (2.23.0)
Requirement already satisfied: pytz in /usr/local/lib/python3.7/dist-packages (from twilio) (2022.6)
Requirement already satisfied: PyJWT<3.0.0,>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from twilio) (2.6.0)
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.7/dist-packages (from requests>=2.0.0->twilio) (3.0.4)
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in /usr/local/lib/python3.7/dist-packages (from requests>=2.0.0->twilio) (1.24.3)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist-packages (from requests>=2.0.0->twilio) (2022.9.24)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests>=2.0.0->twilio) (2.10)

In [43]:

```
pip install playsound
```

Looking in indexes: <https://pypi.org/simple>, <https://us-python.pkg.dev/colab-wheels/public/simple/>

Requirement already satisfied: playsound in /usr/local/lib/python3.7/dist-packages (1.3.0)

In [44]:

```
pip install pygobject
```

Looking in indexes: <https://pypi.org/simple>, <https://us-python.pkg.dev/colab-wheels/public/simple/>

Requirement already satisfied: pygobject in /usr/lib/python3/dist-packages (3.26.1)

In [46]:

```
from twilio.rest import Client
from playsound import playsound
if pred==0:
    print('Forest fire')
    account_sid='ACfb4e6d0e7b0d25def63044919f1b96e3'
    auth_token='f9ae4fc4a617a527da8672e97eefb2d8'
    client=Client(account_sid,auth_token)
    message=client.messages \
        .create(
            body='forest fire is detected,stay alert',
            #use twilio free number
            from_='+1 302 248 4366',
            #to number
            to='+91 99400 12164')
    print(message.sid)
    print("Fire detected")
    print("SMS Sent!")
elif pred==1:
    print('No danger')
```

Forest fire

SM71f2cb3eefd74d32b498b392420cec1b

Fire detected

SMS Sent!