FOREST WITH FIRE

|  |  |
| --- | --- |
| TEAM ID | PNT2022TMID40220 |
| PROJECT NAME | EMERGING METHODS FOR EARLY DEDECTION OF FOREST FIRES |

{

"nbformat": 4,

"nbformat\_minor": 0,

"metadata": {

"colab": {

"provenance": []

},

"kernelspec": {

"name": "python3",

"display\_name": "Python 3"

},

"language\_info": {

"name": "python"

}

},

"cells": [

{

"cell\_type": "markdown",

"source": [

"#VIDEO ANALYSIS\n"

],

"metadata": {

"id": "z-dvSHLoiJ6-"

}

},

{

"cell\_type": "code",

"source": [

"from google.colab import drive\n",

"drive.mount('/content/drive')"

],

"metadata": {

"colab": {

"base\_uri": "https://localhost:8080/"

},

"id": "cBdPqaD-iedR",

"outputId": "686f4700-7fa6-45e1-be41-756c3e9d67f8"

},

"execution\_count": 1,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Mounted at /content/drive\n"

]

}

]

},

{

"cell\_type": "code",

"execution\_count": 6,

"metadata": {

"colab": {

"base\_uri": "https://localhost:8080/",

"height": 847

},

"id": "\_cmx06-RiDuH",

"outputId": "ab8380bd-0a4c-4abf-9684-8f9dc148fb4c"

},

"outputs": [

{

"output\_type": "display\_data",

"data": {

"text/plain": [

"<PIL.Image.Image image mode=RGB size=3840x2160 at 0x7FF2A3D55650>"

],

"image/png": "\n"

},

"metadata": {}

},

{

"output\_type": "stream",

"name": "stdout",

"text": [

"1/1 [==============================] - 0s 54ms/step\n",

"Forest fire\n"

]

}

],

"source": [

"import cv2 \n",

"import numpy as np\n",

"from google.colab.patches import cv2\_imshow\n",

"from matplotlib import pyplot as plt\n",

"import librosa\n",

"from tensorflow.keras.preprocessing import image\n",

"from keras.models import load\_model\n",

"# Create a VideoCapture object and read from input file\n",

"# If the input is the camera, pass 0 instead of the video file name\n",

"cap = cv2.VideoCapture('/content/drive/MyDrive/IBM PROJECT/dataset/datasetvideo.mp4')\n",

" \n",

"# Check if camera opened successfully\n",

"if (cap.isOpened()== False): \n",

" print(\"Error opening video stream or file\")\n",

" \n",

"# Read until video is completed\n",

"while(cap.isOpened()):\n",

" # Capture frame-by-frame\n",

" ret, frame = cap.read()\n",

" if ret == True:\n",

" x=image.img\_to\_array(frame)\n",

" res=cv2.resize(x,dsize=(64,64),interpolation=cv2.INTER\_CUBIC)\n",

" #expand the image shape\n",

" x=np.expand\_dims(res,axis=0)\n",

" model=load\_model(\"/content/drive/MyDrive/IBM PROJECT/dataset/forest.h5\")\n",

" cv2\_imshow(frame)\n",

" pred=model.predict(x)\n",

" pred = int(pred[0][0])\n",

" pred\n",

" int(pred)\n",

" if pred==0:\n",

" print('Forest fire')\n",

" break\n",

" else:\n",

" print(\"no danger\")\n",

" break\n",

" \n",

"# When everything done, release the video capture object\n",

"cap.release()\n",

" \n",

"# Closes all the frames\n",

"cv2.destroyAllWindows()"

]

},

{

"cell\_type": "markdown",

"source": [

"#SENDING ALERT MESSAGE"

],

"metadata": {

"id": "7cQDMd35iQbH"

}

},

{

"cell\_type": "code",

"source": [

"pip install twilio"

],

"metadata": {

"colab": {

"base\_uri": "https://localhost:8080/"

},

"id": "q2DrTY3PjqpX",

"outputId": "ad1e9f20-4ec6-4158-c8ca-ac27492c27a6"

},

"execution\_count": 8,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/\n",

"Collecting twilio\n",

" Downloading twilio-7.15.2-py2.py3-none-any.whl (1.4 MB)\n",

"\u001b[K |████████████████████████████████| 1.4 MB 14.3 MB/s \n",

"\u001b[?25hCollecting PyJWT<3.0.0,>=2.0.0\n",

" Downloading PyJWT-2.6.0-py3-none-any.whl (20 kB)\n",

"Requirement already satisfied: requests>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from twilio) (2.23.0)\n",

"Requirement already satisfied: pytz in /usr/local/lib/python3.7/dist-packages (from twilio) (2022.6)\n",

"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)\n",

"Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist-packages (from requests>=2.0.0->twilio) (2022.9.24)\n",

"Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests>=2.0.0->twilio) (2.10)\n",

"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)\n",

"Installing collected packages: PyJWT, twilio\n",

"Successfully installed PyJWT-2.6.0 twilio-7.15.2\n"

]

}

]

},

{

"cell\_type": "code",

"source": [

"pip install playsound"

],

"metadata": {

"colab": {

"base\_uri": "https://localhost:8080/"

},

"id": "IxPjzVyoj0Rt",

"outputId": "d2e926ad-434d-4dd6-be81-e2f1d280bc3c"

},

"execution\_count": 11,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/\n",

"Collecting playsound\n",

" Downloading playsound-1.3.0.tar.gz (7.7 kB)\n",

"Building wheels for collected packages: playsound\n",

" Building wheel for playsound (setup.py) ... \u001b[?25l\u001b[?25hdone\n",

" Created wheel for playsound: filename=playsound-1.3.0-py3-none-any.whl size=7035 sha256=fed7aa4e3e47d9609777737abddf10bc1506c326b196fbc70bcfe5c64f3714b1\n",

" Stored in directory: /root/.cache/pip/wheels/ba/f8/bb/ea57c0146b664dca3a0ada4199b0ecb5f9dfcb7b7e22b65ba2\n",

"Successfully built playsound\n",

"Installing collected packages: playsound\n",

"Successfully installed playsound-1.3.0\n"

]

}

]

},

{

"cell\_type": "code",

"source": [

"pip install pygobject"

],

"metadata": {

"colab": {

"base\_uri": "https://localhost:8080/"

},

"id": "XN-1cy5CkAT\_",

"outputId": "4b392470-989f-4932-b888-4352916c7910"

},

"execution\_count": 13,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/\n",

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

]

}

]

},

{

"cell\_type": "code",

"source": [

"from twilio.rest import Client\n",

"from playsound import playsound\n",

"if pred==0:\n",

" print('Forest fire')\n",

" account\_sid='AC34c4bee5e03df7bc7dba1eef29761275'\n",

" auth\_token='1fc522239435d0c251c1fd870d715295'\n",

" client=Client(account\_sid,auth\_token)\n",

" message=client.messages \\\n",

" .create(\n",

" body='forest fire is detected,stay alert',\n",

" #use twilio free number\n",

" from\_='+19803934024',\n",

" #to number\n",

" to='+919962082226')\n",

" print(message.sid)\n",

" print(\"Fire detected\")\n",

" print(\"SMS Sent!\")"

],

"metadata": {

"colab": {

"base\_uri": "https://localhost:8080/"

},

"id": "boUwHcdAiVzF",

"outputId": "67c6eb1b-4518-4be4-9ed0-23b14bfdbe37"

},

"execution\_count": 14,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Forest fire\n",

"SM67a6986473b564ad32b5b99a9ba280e9\n",

"Fire detected\n",

"SMS Sent!\n"

]

}

]

}

]

}