**MAIN.PY**

import streamlit as st

import cv2 as cv

import numpy as np

import keras

label\_name = ['Apple scab','Apple Black rot', 'Apple Cedar apple rust', 'Apple healthy', 'Cherry Powdery mildew',

'Cherry healthy','Corn Cercospora leaf spot Gray leaf spot', 'Corn Common rust', 'Corn Northern Leaf Blight','Corn healthy',

'Grape Black rot', 'Grape Esca', 'Grape Leaf blight', 'Grape healthy','Peach Bacterial spot','Peach healthy', 'Pepper bell Bacterial spot',

'Pepper bell healthy', 'Potato Early blight', 'Potato Late blight', 'Potato healthy', 'Strawberry Leaf scorch', 'Strawberry healthy',

'Tomato Bacterial spot', 'Tomato Early blight', 'Tomato Late blight', 'Tomato Leaf Mold', 'Tomato Septoria leaf spot',

'Tomato Spider mites', 'Tomato Target Spot', 'Tomato Yellow Leaf Curl Virus', 'Tomato mosaic virus', 'Tomato healthy']

st.write("""The leaf disease detection model is built using deep learning techniques, and it uses transfer learning to leverage the pre-trained knowledge of a base model. The model is trained on a dataset containing images of 33 different types of leaf diseases.""")

st.write("Please input only leaf Images of Apple, Cherry, Corn, Grape, Peach, Pepper, Potato, Strawberry, and Tomato. Otherwise, the model will not work perfectly.")

model = keras.models.load\_model('Training/model/Leaf Deases(96,88).h5')

uploaded\_file = st.file\_uploader("Upload an image")

if uploaded\_file is not None:

    image\_bytes = uploaded\_file.read()

    img = cv.imdecode(np.frombuffer(image\_bytes, dtype=np.uint8), cv.IMREAD\_COLOR)

    normalized\_image = np.expand\_dims(cv.resize(cv.cvtColor(img, cv.COLOR\_BGR2RGB), (150, 150)), axis=0)

    predictions = model.predict(normalized\_image)

    st.image(image\_bytes)

    if predictions[0][np.argmax(predictions)]\*100 >= 80:

        st.write(f"This leaf is affected by {label\_name[np.argmax(predictions)]}")

    else:st.write(f"Try Another Image")

**Request.py**

import requests

import numpy as np from keras.preprocessing.image

import load\_img,img\_to\_array

url = '<http://127.0.0.1:5000/'>

img = img\_to\_array(load\_img('DanLeaf2.jpg',target\_size=(150,150,3))

r = requests.post(url, json={'img':img.tolist()})

print(f"\n\n{r.json()}\n\n")

**Make API.py**

from flask import Flask, request, jsonify

from tensorflow.keras.models

import load\_model import numpy as np

leaf\_deases\_model = load\_model('/home/shukur/Documents/Python Code/Tree Deases/Leaf\_Deases(95,88).h5')

label\_name = ['Apple scab','Apple Black rot', 'Apple Cedar apple rust', 'Apple healthy', 'Cherry Powdery mildew', 'Cherry healthy','Corn Cercospora leaf spot Gray leaf spot', 'Corn Common rust', 'Corn Northern Leaf Blight','Corn healthy', 'Grape Black rot', 'Grape Esca', 'Grape Leaf blight', 'Grape healthy','Peach Bacterial spot','Peach healthy', 'Pepper bell Bacterial spot', 'Pepper bell healthy', 'Potato Early blight', 'Potato Late blight', 'Potato healthy', 'Strawberry Leaf scorch', 'Strawberry healthy', 'Tomato Bacterial spot', 'Tomato Early blight', 'Tomato Late blight', 'Tomato Leaf Mold', 'Tomato Septoria leaf spot', 'Tomato Spider mites', 'Tomato Target Spot', 'Tomato Yellow Leaf Curl Virus', 'Tomato mosaic virus', 'Tomato healthy']

app = Flask(**name**)

@app.route("/",methods=['POST']) def just(): data = request.json img = np.array(data['img'])

pridict\_image = leaf\_deases\_model.predict(img.reshape((1,) + img.shape ))  
return jsonify({"Label Name":label\_name[np.argmax(pridict\_image)],

Accuracy": pridict\_image[0][np.argmax(pridict\_image)]\*100})  
 if **name** == "**main**": app.run(debug=True)