

LAPORAN PRAKTIKUM APLIKASI WEB

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MODUL

TOPIK:

NLP Dashboard Pertemuan 10



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A. Penjelasan Tugas Praktikum

Streamlit merupakan library yang dimiliki Python yang bersifat open source. Streamlit sendiri dikeluarkan pada bulan Oktober tahun 2019. Ada beberapa Package yang terkandung pada Streamlit, diantaranya adalah Flask dan Django. Streamlit biasanya digunakan untuk membuat aplikasi web (Web Apps). Selain dari itu, Streamlit bersifat open source sehingga mudah untuk dibagikan ke pengguna-pengguna lain. Streamlit dapat memudahkan pengguna untuk mengubah data script menjadi aplikasi berbasis web yang interaktif.

Ketika Streamlit dieksekusi atau dijalankan, streamlit akan membuat server lokal. Aplikasi yang dibuat akan tampil di tab browser secara default. Tab browser tersebut adalah tempat dimana pengguna dapat membuat chart, text, widget, table, dan lain-lain.

Tugas praktikum pada pertemuan ini adalah melakukan Image Processing dan Classification.

B. Langkah-langkah dan Screenshot

A. TRAINING IMAGE PROCESSING CNN

1. Kode Program image_processing.ipynb

Untuk kode program ini, akan saya lampirkan dalam link github repository saya dibawah sebab kode programnya yang berbentuk ipynb dan sangat panjang.

Link GitHub Repository:

https://github.com/flinrzqlh/apk_web_streamlit

Untuk lokasi project berada di awworks > pertemuan9.

B. DASHBOARD WHATPLANT.PY

1. Kode Program WHATPLANT.PY:

```
import streamlit as st

import numpy as np

import tensorflow as tf

from tensorflow import keras

from keras.preprocessing import image

import matplotlib.pyplot as plt

# Load the trained model
```

```
model = keras.models.load_model('model.h5')

# Load the class mapping

class_mapping = np.load('class_mapping.npy',
allow_pickle=True).item()

class_labels = class_mapping['class_labels']

# Assuming you have a dictionary with plant descriptions

descriptions = {

    "Aloevera": "Aloevera is known for its medicinal
properties and is often used in skincare.",

    "Banana": "Bananas are rich in potassium and are a
great snack.",

    "Bilimbi": "Bilimbi is a sour fruit often used in
cooking.",

    "Cantaloupe": "Cantaloupe is a sweet, juicy melon.",

    "Cassava": "Cassava is a root vegetable that is a
staple food in many parts of the world.",

    "Coconut": "Coconuts are known for their versatility
and are used in many dishes and products.",

    "corn": "Corn is a staple food in many parts of the
world and is used in a variety of dishes.",
```

"Cucumber": "Cucumbers are low in calories and high in water content.",

"curcuma": "Curcuma is a spice that is often used in cooking and has many health benefits.",

"Eggplant": "Eggplants are a versatile vegetable that can be used in many dishes.",

"Galangal": "Galangal is a root that is often used in Thai cooking.",

"Ginger": "Ginger is a spice that is often used in cooking and has many health benefits.",

"Guava": "Guava is a tropical fruit that is rich in vitamins and minerals.",

"Kale": "Kale is a leafy green vegetable that is high in nutrients.",

"Longbeans": "Longbeans are a type of legume that are often used in Asian cooking.",

"Mango": "Mangoes are a tropical fruit that are sweet and juicy.",

"Melon": "Melons are a type of fruit that are sweet and refreshing.",

"Orange": "Oranges are a citrus fruit that are high in vitamin C.",

"Paddy": "Paddy is a type of grain that is often used in cooking.",

```
"Papaya": "Papayas are a tropical fruit that are sweet
and juicy.",

"Pepperchili": "Pepperchili is a type of chili pepper
that is often used in cooking.",

"Pineappla": "Pineapples are a tropical fruit that are
sweet and juicy.",

"Pomelo": "Pomelos are a type of citrus fruit that are
sweet and refreshing.",

"Shallot": "Shallots are a type of onion that are
often used in cooking.",

"Soybeans": "Soybeans are a type of legume that are
often used in cooking.",

"Spinach": "Spinach is a leafy green vegetable that is
high in iron.",

"Sweetpotato": "Sweet potatoes are a root vegetable
that are often used in cooking.",

"Tobacco": "Tobacco is a plant that is often used to
make cigarettes.",

"Waterapple": "Water apples are a type of fruit that
are sweet and juicy.",

"Watermelon": "Watermelons are a type of fruit that
are sweet and refreshing."

}
```

```

# Streamlit app title

st.title("🌱 Plant/Fruit Classifier")


# Upload image

uploaded_file = st.file_uploader("Upload an image of a
plant/fruit", type=['jpg', 'jpeg', 'png'])


if uploaded_file is not None:

    # Display the uploaded image

    img = image.load_img(uploaded_file, target_size=(244,
244))

    st.image(img, caption='Uploaded Image',
use_column_width=True)


    # Prepare the image for prediction

    img_array = image.img_to_array(img)

    img_array = np.expand_dims(img_array, axis=0) / 255.0
# Rescale


    # Predict the class

```



```

predictions = model.predict(img_array)

predicted_class_index = np.argmax(predictions[0])

predicted_class_label =
class_labels[predicted_class_index]

# Display the prediction

st.write(f"Prediction: **{predicted_class_label}**")

# Display the description

st.write("Description:")

st.write(descriptions.get(predicted_class_label, "No
description available.))

# Suggest uses

if predicted_class_label == "Banana":

    st.write("🍌 You can use bananas in smoothies,
desserts, or eat them as a snack!")

elif predicted_class_label == "Aloevera":

    st.write("🌿 Aloevera can be used in skin care
products and is also consumed for health benefits.")

```

```
else:

    st.write("No suggestions available for this  
plant/fruit.")
```

2. Kode pada file config.toml:

```
[theme]

primaryColor = "#3F2739"    # This is the color of the  
sidebar

backgroundColor = "#616247FF" # Light pink for the main  
background

secondaryBackgroundColor = "#DAA03DFF" # Optional lighter  
shade for other elements

textColor = "#ffffff" # Main text color (black)

font = "sans serif" # Default font family
```

3. Screenshot:

Screenshot Halaman Streamlit:





C. Kendala yang Dialami

Untuk praktikum ini, kami mengalami kendala dalam training model. Dikarenakan Google Collab GPU Usage saya terkena limit (akibat dari rerun training dataset berukuran 1gb lebih dan dengan kelas lebih dari 30), saya tidak sempat untuk mengunduh model.

D. Kesimpulan

Pada praktikum ini, kami berhasil membuat sebuah file ipynb untuk membuat sebuah model training data untuk Image Processing. Selain dari itu kami juga membuat aplikasi Streamlit mengenai itu.