User documentation

Program 2

Table of Contents

Getting started

Required Materials:

1. Ensure you have a working laptop.
2. Download the zip files.
3. Make sure you have downloaded the dataset.

Required Libraries to be installed:

```
Required Packages and installations
   pip install numpy
   pip install matplotlib
   pip install tensorflow
   pip install keras-vis
   pip install scipy.ndimage
   pip install PIL
   pip install sys
```

These are the specific imports if there is issue try downloading these specific ones:

```
import numpy as np
import matplotlib.pyplot as plt
from PIL import Image
from tensorflow.keras.layers import Input, Dense, Flatten, Conv2D, MaxPooling2D,
BatchNormalization, Dropout, LeakyReLU
from tensorflow.keras.preprocessing.image import ImageDataGenerator, img_to_array,
load_img
from tensorflow.keras.optimizers import Adam
```

```
from tensorflow.keras.models import Model
from matplotlib.backends.backend_pdf import PdfPages
from scipy.ndimage import zoom
import sys
```

Running the Script

To run you must host it on a webserver of some sort. When creating this app, we used VSCode live server extension to launch and test and host our server.

Make sure Meso4_DF is in the same folder as the python script *fake_img_det.py*.

This can also be done using python. Simply type `python3 fake_img_det.py` in the command line where the script *fake_img_det.py* is located and you can launch the app from there.

You will be presented with these menu options after the model has been loaded:

```
   ---- Menu ----
Enter 1 to produce viz for the sample image

     2 to run on your own image.
```

OPTION 1:

```
User selected 1
Please input the path to the directory where the DeepFake and Real Dat
asets are in: /Users/kimigrace/Desktop/CSE161/final_project/
```

Enter 1 if you like the program to pick a random image from the DeepFake or Real data set. You will then be prompted to enter the file_path to the directory with the datasets. An example would be to type in: /Users/kimigrace/Desktop/CSE161/final_project

Then the program will run and output will be stored in that directory under vis_output.pdf

OPTION 2:

```
User selected 2
Please enter the path to the image you would like to analyze: /Users/k
imigrace/Desktop/CSE161/final_project/Real/34_0.jpg

The file path you entered was /Users/kimigrace/Desktop/CSE161/final_pr
oject/Real/34_0.jpg
.............Image has successfully loaded

Real images are encoded with 1 and Fake images encoded with a 0
Please inidcate if this image is real or fake by inputting either 1 or
 0: 1
```

Enter 2 if you would like the model to run on a specific image. Make sure you know if this image is real or fake if you want the prediction score for the model to be accurate.

It will then prompt you to enter the classifier (a 1 or a 0) to label the image as real or fake. Please enter a 1 if the image is real or 0 if the image is fake.

Then the program will run to complete and output will be stored in that directory under vis_output.pdf

Support

You may contact me at kholsapp@ucsc.edu for support.