

Name- \_\_\_\_\_ Section/Group – \_\_\_\_\_

UID- \_\_\_\_\_

Semester – 1<sup>st</sup> Subject –Disruptive Technologies Subject Code -21SPH-141 Branch – CSE

## EXPERIMENT 2.2

Aim :

Emotion and Gesture Detection.

Tool Used:

Google Collab

Basic Concept/ Command Description:

Deepface is a lightweight face recognition and facial attribute analysis (age, gender, emotion and race) framework for python. It is a hybrid face recognition framework wrapping state-of-the-art

models: VGG-Face, Google FaceNet, OpenFace, Facebook DeepFace, DeepID, ArcFace and Dlib.

Those models already reached and passed the human level accuracy. The library is mainly based on Keras and TensorFlow.

Code and Observations, Simulation

Screen Shots and Discussions:

```
# Install Deepface
```

```
+ Code + Text
pip install deepface
Collecting deepface
  Downloading deepface-0.0.68-py3-none-any.whl (61 kB)
    61 kB 3.2 MB/s
Requirement already satisfied: opencv-python>=3.4.4 in /usr/local/lib/python3.7/dist-packages (from deepface) (4.1.2.30)
Requirement already satisfied: tensorflow>=1.9.0 in /usr/local/lib/python3.7/dist-packages (from deepface) (2.7.0)
Requirement already satisfied: tqdm>=4.30.0 in /usr/local/lib/python3.7/dist-packages (from deepface) (4.62.3)
Requirement already satisfied: Pillow>=5.2.0 in /usr/local/lib/python3.7/dist-packages (from deepface) (7.1.2)
Requirement already satisfied: keras>=2.2.0 in /usr/local/lib/python3.7/dist-packages (from deepface) (2.7.0)
Requirement already satisfied: numpy>=1.14.0 in /usr/local/lib/python3.7/dist-packages (from deepface) (1.19.5)
Requirement already satisfied: Flask>=1.1.2 in /usr/local/lib/python3.7/dist-packages (from deepface) (1.1.4)
Collecting mtcn>=0.1.0
  Downloading mtcn-0.1.1-py3-none-any.whl (2.3 MB)
    2.3 MB 10.9 MB/s
Collecting gdown>=3.10.1
  Downloading gdown-4.2.0.tar.gz (13 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing wheel metadata ... done
Collecting retina-face>=0.0.1
  Downloading retina_face-0.0.5-py3-none-any.whl (14 kB)
Requirement already satisfied: pandas>=0.23.4 in /usr/local/lib/python3.7/dist-packages (from deepface) (1.1.5)
Requirement already satisfied: click<8.0,>=5.1 in /usr/local/lib/python3.7/dist-packages (from Flask>=1.1.2->deepface) (7.1.2)
Requirement already satisfied: Werkzeug<2.0,>=0.15 in /usr/local/lib/python3.7/dist-packages (from Flask>=1.1.2->deepface) (1.0.1)
Requirement already satisfied: Jinja2<3.0,>=2.10.1 in /usr/local/lib/python3.7/dist-packages (from Flask>=1.1.2->deepface) (2.11.3)
Requirement already satisfied: itsdangerous<2.0,>=0.24 in /usr/local/lib/python3.7/dist-packages (from Flask>=1.1.2->deepface) (1.1.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.7/dist-packages (from gdown>=3.10.1->deepface) (3.4.0)
Requirement already satisfied: six in /usr/local/lib/python3.7/dist-packages (from gdown>=3.10.1->deepface) (1.15.0)
Requirement already satisfied: requests[socks] in /usr/local/lib/python3.7/dist-packages (from gdown>=3.10.1->deepface) (2.23.0)
Requirement already satisfied: BeautifulSoup4 in /usr/local/lib/python3.7/dist-packages (from gdown>=3.10.1->deepface) (4.6.3)
Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.7/dist-packages (from Jinja2<3.0,>=2.10.1->Flask>=1.1.2->deepface) (2.0.1)
Requirement already satisfied: python-dateutil>=2.7.3 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.23.4->deepface) (2.8.2)
```

## #Import DeepFace

```
[ ] from deepface import DeepFace
```

```
Directory /root /.deepface created
Directory /root /.deepface/weights created
```

## #Import Computer vision library and Matplotlib

```
[ ] import cv2
import matplotlib.pyplot as plt
```

## #Upload Happy Man image and show it using pyplot

```
[ ] import cv2
import matplotlib.pyplot as plt
img1=cv2.imread("/content/happy.jpeg")
plt.imshow(img1[:,::-1])

plt.show()
```



## #Analyze Image (emotion)

```
[ ] #analyze image
result=DeepFace.analyze(img1, actions = ['emotion'])
```

```
facial_expression_model_weights.h5 will be downloaded...
Downloading...
From: https://github.com/serengil/deepface\_models/releases/download/v1.0/facial\_expression\_model\_weights.h5
To: /root/.deepface/weights/facial_expression_model_weights.h5
100%|██████████| 5.98M/5.98M [00:00<00:00, 65.7MB/s]
```

```
[ ] print(result)
```

```
{'emotion': {'angry': 2.028009251150747e-15, 'disgust': 7.346957871075555e-22, 'fear': 1.080158117765949e-14, 'happy': 99.99976754187152, 'sad': 3.1715177081304674e-10,
```

## #Analyze Image (age)

```
[ ] result=DeepFace.analyze(img1, actions = ['age'])
```

```
Action: gender: 100%|██████████| 3/3 [00:01<00:00, 1.90it/s]
```

```
[ ] print(result)
```

```
{'age': 32, 'region': {'x': 33, 'y': 27, 'w': 70, 'h': 70}, 'emotion': {'angry': 2.028009251150747e-15, 'disgust': 7.346957871075555e-22, 'fear': 1.080158117765949e-14,
```

## #Analyze Image (gender)

```
[ ] result=DeepFace.analyze(img1, actions = ['gender'])
```

Downloading...

From: [https://github.com/serengil/deepface\\_models/releases/download/v1.0/gender\\_model\\_weights.h5](https://github.com/serengil/deepface_models/releases/download/v1.0/gender_model_weights.h5)

To: /root/.deepface/weights/gender\_model\_weights.h5

gender\_model\_weights.h5 will be downloaded...

100%|██████████| 537M/537M [00:02<00:00, 179MB/s]

Action: age: 100%|██████████| 3/3 [00:01<00:00, 1.57it/s]

```
[ ] print(result)
```

```
{'gender': 'Man', 'region': {'x': 33, 'y': 27, 'w': 70, 'h': 70}, 'emotion': {'angry': 2.028009251150747e-15, 'disgust': 7.346957871075555e-22, 'fear': 1.080158117765949
```

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