Face Recognition and Attendance Tracking

Table of Contents

- [Introduction](#introduction)

- [Prerequisites](#prerequisites)

- [Installation](#installation)

- [Usage](#usage)

- [License](#license)

Introduction

The Face Recognition and Attendance Tracking code is a Python script that utilizes the MTCNN face detection model and the face\_recognition library to recognize faces in an input image and track attendance based on known individuals. This documentation provides an overview of the code and instructions for usage.

Prerequisites

Before using the code, ensure that you have the following prerequisites installed on your system:

- Python 3.x

- OpenCV (cv2)

- Matplotlib

- face\_recognition

- mtcnn

- numpy

You can install these dependencies using the following command:

- python -m pip install -U matplotlib

- pip install opencv-python

- pip install face-recognition

- pip install mtcnn

- pip install numpy

- pip install gradio

Installation

1. Clone or download the code repository to your local machine.

2. Ensure that the known faces (individual images) are stored in the "Individual images" folder in the same directory as the code file. The code will read these images and their respective class names (student names) from this folder.

3. Create a CSV file (`known\_face\_encodings.csv`) containing known face encodings. This file should be structured with each row representing a known individual's face encoding. You can create this file using the `face\_recognition` library.

Usage

1. Open the code file (`your\_script\_name.py`) in a Python environment.

2. Replace the `image\_path` variable with the path to the image in which you want to perform face recognition and attendance tracking.

3. Adjust the similarity threshold if needed. The default value is 0.8 (80%), but you can modify it based on your requirements.

4. Run the script:

python \_.py

5. The code will detect faces in the input image, compare them with the known faces, and generate a list of recognized students. It will display the image with bounding boxes and names of recognized students using Matplotlib.

6. The script will also write the attendance data to a CSV file (`attendance.csv`) in the specified directory.

License

This code is provided under the MIT License

Features

- Multiple User Faces can be detected

- Attendance of Multiple Users taken

- Attendance of Users displayed

- User-Friendly Interface: