Emotion Recognition from Facial Expressions

An exploration into understanding and quantifying human emotions through facial analysis.

What is Emotion Recognition?

Emotion recognition is a software technique that analyzes human faces using advanced image processing and sophisticated algorithms. It aims to "read" emotions and determine the probabilities of mixed emotions a person might be experiencing.

Installation Guide

To get started, you'll need to install the necessary dependencies. This can be done easily by using the provided requirements file.

```
pip install -r requirements.txt
```

How to Use the Application

Run the real-time video script to launch the application. A window will display your webcam feed, while another will show the detected emotional probabilities.

```
python real_time_video.py
```

The included pretrained model offers the best accuracy. For custom models, you may need to run the training script.

Training the Emotion Classifier

If you wish to train your own emotion classifier or use a different model, you can execute the following script. This allows for customization and experimentation with various models.

```
python train_emotion_classifier.py
```

Dataset Utilized

The project utilizes a dataset available on Kaggle for emotion classification. After downloading, place the CSV file in the specified directory.

[fer2013 dataset](#)

The current test accuracy for fer2013 emotion classification is 66%.

Inspiration and Credits

This work draws significant inspiration from existing projects and valuable resources in the field of facial analysis and machine learning.

Inspired by: oarriaga/face_classification

Assisted by resources from Adrian Rosebrock.

Future Enhancements

An exciting ongoing development includes drawing emotion faces directly next to the detected face in the application's interface. This will provide a more intuitive and visually direct representation of the analysis.