README

Facial Detection

Prerequisites

- Python 3.7
- OpenCV
- matplotlib

The detector has two folders: test and train.

Train contains 3 jupyter notebooks used for training.

1. prep train data – Used to prep the data. Crop the the face. Produce negative samples.
2. train HOG_SVM face detector – trains the Histogram of Gradients with SVM

   Getting started: run each cell in order

3. train OpenCV face detectors – trains the fisher, eigen, and lbph

   Getting started:

   choose the training data, choose between fisher, eigen, lpb, choose image dimensions, and choose training parameters. Run each cell in order

Test contains 1 jupyter notebook.

1. summary of the trained classifiers: HOG, Eigenfaces, fisherfaces, lbph

   Getting started: run each cell in order (choose between eigen and fisher)

Facial Recognition

Prerequisites

- Python 3.7
- OpenCV
- matplotlib
- Sklearn
- Imutils
- OpenFace (cmusatyalab.github.io)

Getting Start

- Create dataset of face images.
- Place the face images in dataset folder specified in the ‘face_recognition.ipynb’

- Open ‘face_recognition.ipynb’ and run each cell in order

Facial Emotion

Prerequisites

- Python 3.7
- OpenCV
- matplotlib
- Sklearn
- Imutils
- TensorFlow Keras
- face_recognition
- dlib
- pandas
- PIL Image

Getting Start

- Create dataset of face images.
- Place the face images in dataset folder specified in the ‘emotion_Adetection.ipynb’
- Open ‘emotion_detection.ipynb’ and run each cell in order