

Instructions for face training

1. Create a list of positive images:

```
find data/Positive_Images -iname "*.jpg" > positives.txt
```

2. Create a list of negative images:

```
find data/Negative_Images -iname "*.jpg" > negatives.txt
```

3. Create more samples of positive images:

3.1. Create positive samples with the `bin/createsamples.pl` script and save them to the `./samples` folder:

```
perl bin/createsamples.pl positives.txt negatives.txt samples 1000 "opencv_createsamples  
-bgcolor 0 -bgthresh 0 -maxxangle 1.1 -maxyangle 1.1 maxzangle 0.5 -maxidev 40 -w 80 -h  
40"
```

Tip!!! Pay attention in the number of samples you wish to create!!

3.2. Use the compiled executable `mergevec` to merge the samples in `./samples` into one file:

```
find ./samples -name '*.vec' > samples.txt  
./mergevec samples.txt samples.vec
```

Tip!!!Mergevec executable must be in opencv_traincascade directory

Alternatively, if the above fails follow the instructions bellow

3.1. Compile and run rectangle.cpp to create positives.dat:

```
cmake .  
make  
./rectangle
```

3.2. Create positive samples with opencv_createsamples:

```
./opencv_createsamples -info positives.dat -vec positives.vec -bg negatives.txt -num 1000  
-bgcolor 0 -bgthresh 0 -maxxangle 1.1 -maxyangle 1.1 maxzangle 0.5 -maxidev 40 -w 80 -h  
40
```

Tip!!!opencv_createsamples executable must be in opencv_traincascade directory

```
cp opencv-2.4.8/build/bin/opencv_createsamples opencv_traincascade/
```

4. Start training the classifier with `opencv_traincascade`, which comes with OpenCV, and save the results to `./classifier`:

```
./opencv_traincascade -data classifier -vec samples.vec -bg negatives.txt  
-numStages 20 -minHitRate 0.999 -maxFalseAlarmRate 0.5 -numPos 227  
-numNeg 3019 -w 80 -h 40 -mode ALL -precalcValBufSize 1024  
-precalcIdxBufSize 1024
```

Tip!!!opencv_createsamples executable must be in opencv_traincascade directory

```
cp opencv-2.4.8/build/bin/opencv_traincascade opencv_traincascade/
```

Comments:

1. How to compile mergevec.cpp

```
cp src/mergevec.cpp ~/opencv-2.4.6.1/apps/haartraining  
cd ~/opencv-2.4.6.1/apps/haartraining  
g++ `pkg-config --libs --cflags opencv` -I. -o mergevec mergevec.cpp cvboost.cpp  
cvcommon.cpp cvsamples.cpp cvhaarclassifier.cpp cvhaartraining.cpp -lopencv_core  
-lopencv_calib3d -lopencv_imgproc -lopencv_highgui -lopencv_objdetect
```