

In [2]:

```
# ! cd drive/MyDrive/dataset/face; #wget "http://mmlab.ie.cuhk.edu.hk/archive/CNN/data/train.zip"; # unzip train.zip
# ! cd drive/MyDrive/dataset/face; rm iFakeFaceDB.zip; #wget "http://socia-lab.di.ubi.pt/~jcneves/iFakeFaceDB.zip"
# ! ls drive/MyDrive/dataset/face/lfw_5590 | wc
[!] ls drive/MyDrive/dataset/face/myface |wc
# ! rm -r data
```

0 0 0

In [1]:

```
import os
import cv2 as cv
import numpy as np
from skimage.io import imread, imshow
```

In [3]:

```
def remove_noise(folder, folder2, size):
    list_file= os.listdir(folder)
    for filename in list_file[0:size]:
        img= cv.imread(os.path.join(folder,filename), 0)
        img= cv.resize(img, (100, 100))
        img= cv.GaussianBlur(img, (5,5), 0.5)
        cv.imwrite(folder2+filename, img)
```

In [4]:

```
remove_noise("drive/MyDrive/dataset/face/CelebAGaze/0/", "drive/MyDrive/dataset/face/myface/", 1000)
```

In [5]:

```
def GenerationInfo(folder, state ,size, w, h, filename):
    files_name= os.listdir(folder)[0:size]
    text2="\n"
    if state: text2=" 1 0 0 "+str(w)+" "+str(h)+"\n"

    text=""
    for fn in files_name:
        text+= folder+fn+text2

    f = open(filename, "w")
    f.write(text)
    f.close()
```

In [6]:

```
folder1="drive/MyDrive/dataset/face/myface/"
folder2="drive/MyDrive/dataset/Dataset2/car/cars_train/"
GenerationInfo(folder1, True, 1000, 100, 100, "face.info" )
GenerationInfo(folder2, False, 1000, 0, 0, "bg.info")
```

In [7]:

```
[!] opencv_createsamples -info face.info -num 550 -w 100 -h 100 -vec face.vec
```

Info file name: face.info  
Img file name: (NULL)  
Vec file name: face.vec  
BG file name: (NULL)  
Num: 550  
BG color: 0  
BG threshold: 80  
Invert: FALSE  
Max intensity deviation: 40  
Max x angle: 1.1  
Max y angle: 1.1  
Max z angle: 0.5  
Show samples: FALSE  
Width: 100  
Height: 100  
Max Scale: -1  
Create training samples from images collection...  
Done. Created 550 samples

In [8]:

```
[!] opencv_traincascade -data data -vec face.vec -bg bg.info -numPos 500 -numNeg 500 -numStages 10 -w 100 -h 100 -featureType LBP
```

PARAMETERS:  
cascadeDirName: data  
vecFileName: face.vec  
bgFileName: bg.info  
numPos: 500  
numNeg: 500  
numStages: 10  
precalcValBufSize[Mb] : 1024  
precalcIdxBufSize[Mb] : 1024  
acceptanceRatioBreakValue : -1  
stageType: BOOST  
featureType: LBP  
sampleWidth: 100  
sampleHeight: 100  
boostType: GAB  
minHitRate: 0.995  
maxFalseAlarmRate: 0.5  
weightTrimRate: 0.95  
maxDepth: 1  
maxWeakCount: 100  
Number of unique features given windowSize [100,100] : 2722500

===== TRAINING 0-stage =====  
<BEGIN  
POS count : consumed 500 : 500  
NEG count : acceptanceRatio 500 : 1  
tcmalloc: large alloc 1073741824 bytes == 0x564c275b6000 @ 0x7fdf835921e7 0x7fdf8278c382 0x7fdf8288b21b 0x564bfbbc0608 0x564bfbbc0d42 0x564bfbbc0e1a 0x564bfbbca1a9 0x564bfbbb6fff 0x7fdf81a4fbf7 0x564bfbbb7c1a  
Precalculation time: 25  
+-----+  
| N | HR | FA |  
+-----+  
| 1 | 1 | 1 |  
+-----+  
| 2 | 1 | 1 |  
+-----+  
| 3 | 0.998 | 0.184 |  
+-----+  
END>  
Training until now has taken 0 days 0 hours 22 minutes 27 seconds.

===== TRAINING 1-stage =====  
<BEGIN  
POS count : consumed 500 : 501  
NEG count : acceptanceRatio 500 : 0.352858  
Precalculation time: 27  
+-----+  
| N | HR | FA |  
+-----+  
| 1 | 1 | 1 |  
+-----+  
| 2 | 1 | 1 |  
+-----+  
| 3 | 1 | 0.372 |  
+-----+  
END>  
Training until now has taken 0 days 0 hours 45 minutes 25 seconds.

===== TRAINING 2-stage =====  
<BEGIN  
POS count : consumed 500 : 501  
NEG count : acceptanceRatio 500 : 0.188253  
Precalculation time: 26  
+-----+  
| N | HR | FA |  
+-----+  
| 1 | 1 | 1 |  
+-----+  
| 2 | 1 | 0.232 |  
+-----+  
END>  
Training until now has taken 0 days 1 hours 0 minutes 56 seconds.

===== TRAINING 3-stage =====  
<BEGIN  
POS count : consumed 500 : 501  
NEG count : acceptanceRatio 500 : 0.0856751  
Precalculation time: 26  
+-----+  
| N | HR | FA |  
+-----+  
| 1 | 1 | 1 |  
+-----+  
| 2 | 1 | 1 |  
+-----+  
| 3 | 0.996 | 0.318 |  
+-----+  
END>  
Training until now has taken 0 days 1 hours 24 minutes 15 seconds.

===== TRAINING 4-stage =====  
<BEGIN  
POS count : consumed 500 : 503  
NEG count : acceptanceRatio 500 : 0.054019  
Precalculation time: 25  
+-----+  
| N | HR | FA |  
+-----+  
| 1 | 1 | 1 |  
+-----+  
| 2 | 1 | 1 |  
+-----+  
| 3 | 1 | 0.332 |  
+-----+  
END>  
Training until now has taken 0 days 1 hours 48 minutes 1 seconds.

===== TRAINING 5-stage =====  
<BEGIN  
POS count : consumed 500 : 503  
NEG count : acceptanceRatio 500 : 0.0309349  
Precalculation time: 25  
+-----+  
| N | HR | FA |  
+-----+  
| 1 | 1 | 1 |  
+-----+  
| 2 | 1 | 1 |  
+-----+  
| 3 | 1 | 0.49 |  
+-----+  
END>  
Training until now has taken 0 days 2 hours 11 minutes 1 seconds.

===== TRAINING 6-stage =====  
<BEGIN  
POS count : consumed 500 : 503  
NEG count : acceptanceRatio 500 : 0.0153214

NEG count : acceptanceRatio 500 : 0.0103211  
Precalculation time: 24

	N	HR	FA
1	1	1	1
2	1	1	1
3	1	0.454	

END>  
Training until now has taken 0 days 2 hours 34 minutes 8 seconds.

===== TRAINING 7-stage =====  
<BEGIN  
POS count : consumed 500 : 503  
NEG count : acceptanceRatio 500 : 0.0127953  
Precalculation time: 25

	N	HR	FA
1	1	1	1
2	1	1	1
3	1	0.476	

END>  
Training until now has taken 0 days 2 hours 57 minutes 24 seconds.

===== TRAINING 8-stage =====  
<BEGIN  
POS count : consumed 500 : 503  
NEG count : acceptanceRatio 500 : 0.00800602  
Precalculation time: 26

	N	HR	FA
1	1	1	1
2	1	1	1
3	1	0.466	

END>  
Training until now has taken 0 days 3 hours 20 minutes 45 seconds.

===== TRAINING 9-stage =====  
<BEGIN  
POS count : consumed 500 : 503  
NEG count : acceptanceRatio 500 : 0.00592677  
Precalculation time: 27

	N	HR	FA
1	1	1	1
2	1	1	1
3	1	0.498	

END>  
Training until now has taken 0 days 3 hours 44 minutes 20 seconds.