# 04.EigenFacesClass

April 21, 2018

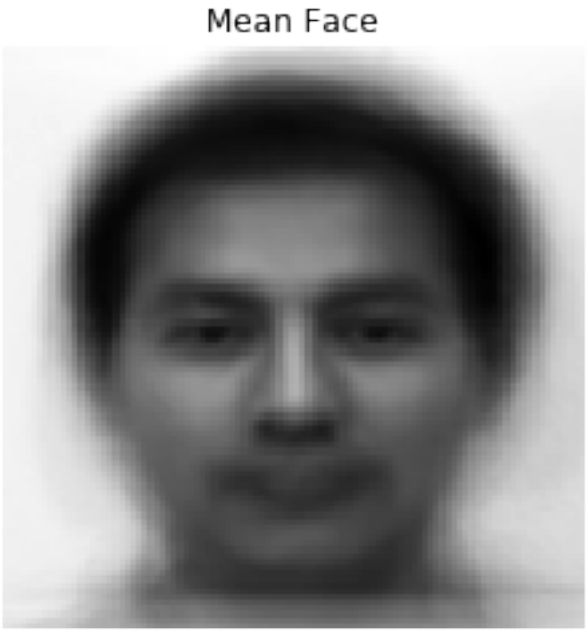
```
In [1]: import numpy as np
        import matplotlib.pyplot as plt
        from eigenface.yalefaces import YaleFaceDb
        from eigenface.eigenfaces import EigenFaces, plot_image, plot_images, distance_classify
        np.set_printoptions(precision=2, suppress=True, formatter={'float': '{: 0.2f}'.format}
```

```
In [2]: eigenfaces = EigenFaces()
        db = YaleFaceDb()
```

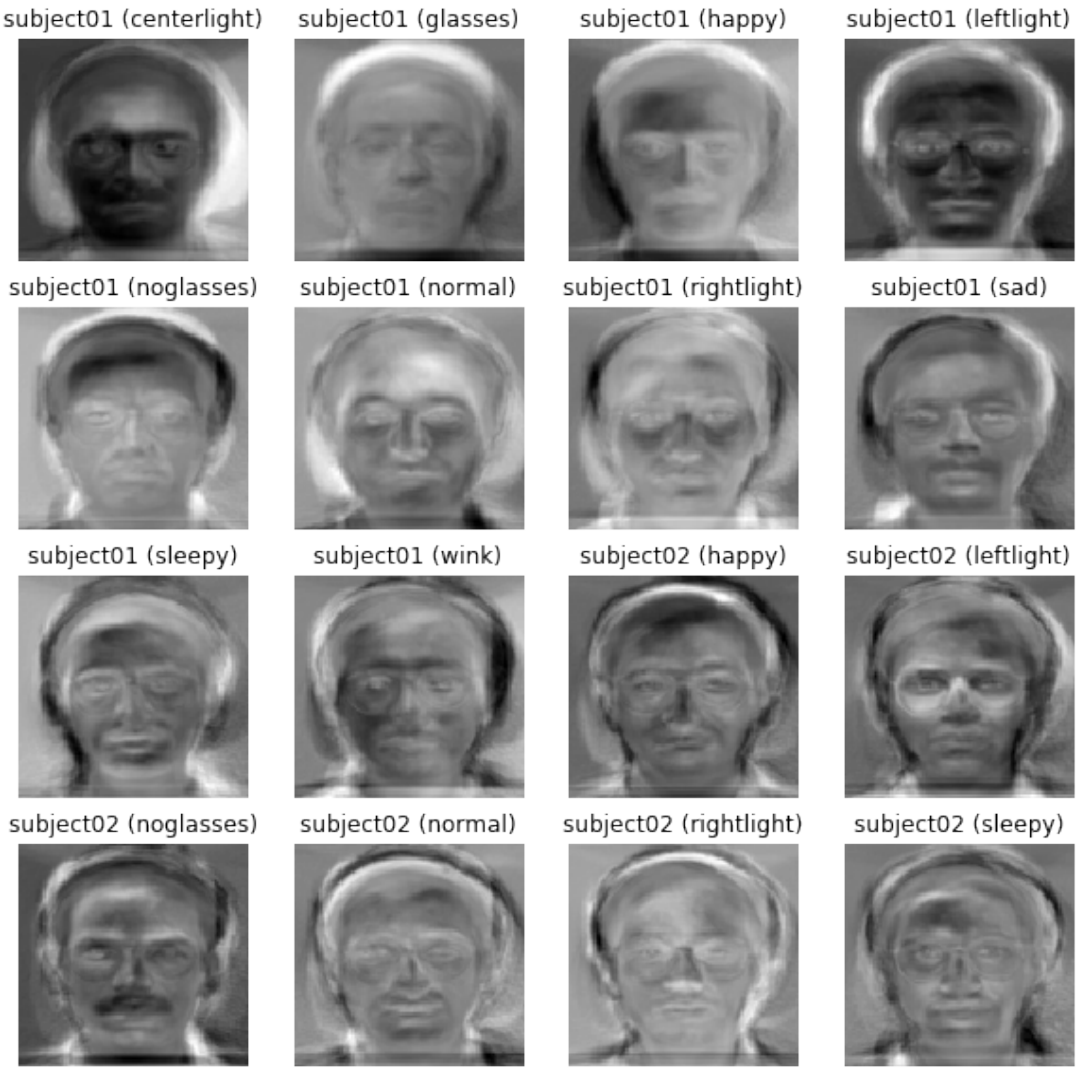
```
In [3]: (x_train, y_train),(x_test, y_test) = db.get_random_train_test()
```

```
In [4]: eigenfaces.update(x_train, y_train)
```

```
In [5]: eigenfaces.plot_mean_face()
```

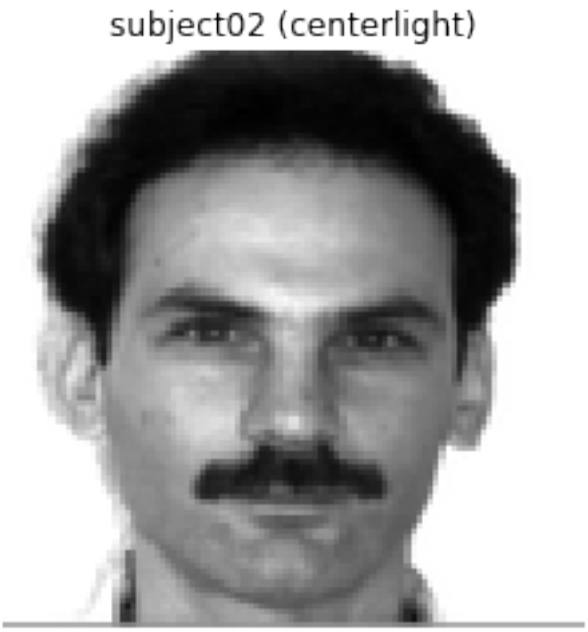


In [6]: eigenfaces.plot_eigen_faces()




<matplotlib.figure.Figure at 0x218b313e358>

In [7]: plot_image(x_test[1], y_test[1])




```
In [8]: (cnt_true, cnt_total) = eigenfaces.evaluation(x_test, y_test)
        print('Accuracy: %.2f%%' % ((cnt_true / cnt_total) * 100))
```

```
Accuracy: 93.10%
```

```
In [ ]:
```