

(A Simple Face Recognition Algorithm)

You have a data set of different faces (5 persons) in the folder "People". Your task is to write a MATLAB code that automatically recognises the faces in the folder "Test" (you have 5 faces) using the Euclidean distance metric. The final result should assign the 5 faces to their correct names based on the smallest Euclidean distance as shown below:

Predicted as	Andreas	Marie	Mikael	Stefan	Ulf	True Name
1_1	6.4041	77.6533	9.9427	77.2039	67.3535	Andreas
1_4	58.5306	16.8553	54.8473	31.4496	18.1623	Marie
1_5	2.5797	70.1491	2.5407	70.5164	60.1726	Mikael
1_7	66.1990	21.2682	63.2978	4.9464	12.0291	Stefan
1_8	63.0612	13.5261	59.8465	11.2630	2.7807	Ulf

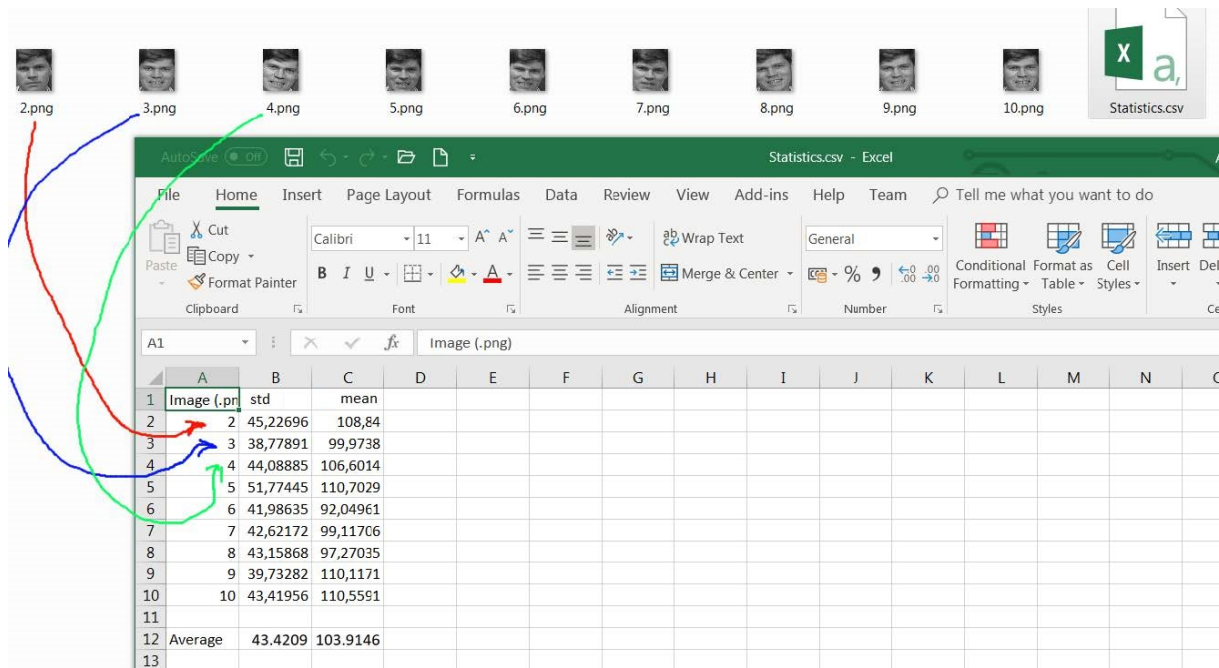
Fig.1 Calculated distances of images in "Test" to the means of other people.

How it works?

Step 1: First calculate the mean and the standard deviation (std) of all images in each of the 5 folders (Andreas, Marie, Mikael, Stefan, Ulf). Then calculate the average of the means and the average of the stds, you will get something like:

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43.4209 , 103.9146 , Andreas
69.7218 , 170.1453 , Marie
45.9800 , 106.6726 , Mikael
50.2844 , 174.5176 , Stefan
58.3135 , 163.0294 , Ulf
```

See the image below to see how to obtain the first row (Andreas)



Step 2: Calculate the mean and std of each of the images in the folder "Test".

Step 3: Calculate the Euclidean distances of each image in the folder "Test" to the mean of other people as shown in Fig.1 (the program's output should be as in the figure).

$$d = \sqrt{(\mu_2 - \mu_1)^2 + (\sigma_2 - \sigma_1)^2}$$