Assignment 03
Computer Vision

Maximum points: 7 marks

Part 1 (Points 2)

In this assignment, you are going to implement a gender recognition model using conventional machine learning. You will take help from your first assignment. Let me remind you that you created a feature vector in your fist assignment. Now use the same feature vector to train a simple classifier for gender recognition. You can use any classifier of your choice. The training and testing database is provided with this assignment. Do not change the training and testing data.

Part 2: (Points 2)

You will notice that the performance of your that feature vector (assignment 1) will not be satisfactory. Report your results with accuracy. Report your results and also give your 5 lines comment why you are getting bad results. Please do some study and give some technical reasons why your feature vector is not helping you in this specific task. You can include your comments in the python code. Since your first feature vector is not performing well, add some more features to your model. Do some background study and try to know which features are helping in gender recognition. You must use at least 3 features to train and test your model. You can use any classifier for your work. Deep learning models are not allowed in this assignment.

Part 3: (Points 3):

Since you use multiple features for your work in step 2. All of these features are not equally important. Sometimes more features are a burden on the model. Use SKLEARN feature importance function and report your results in graphical form showing how much each feature is contributing. You can take help from Feature importances with a forest of trees — scikit-learn 1.4.1 documentation for feature importance implementation.