Week 5: Summer Internship

21 June 2021- 27 June 2021

Tasks

The main tasks in this week are as follows:

- Integrating all the methods in same code for automating and hence better testing (code oriented).
- Compile whole tool and to get detailed data.
- Test the code against various inputs.
- Adding code for other cases also like age, beard/no-beard etc.

Integrating the methods

Taking the directory names and method number as input from command line and calling corresponding functions.
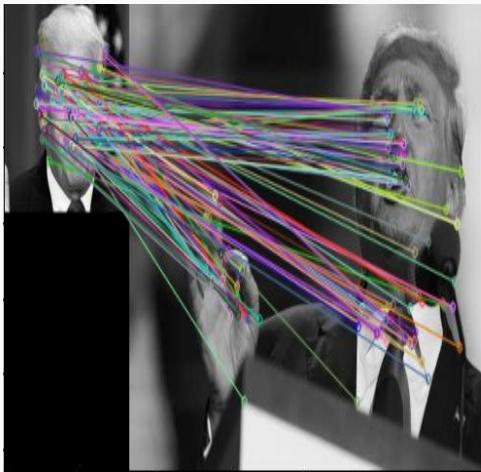
Also ensuring all the exception cases and adding comments for the user.

Also did some optimisations that were possible as we were calling the method multiple times in a loop.
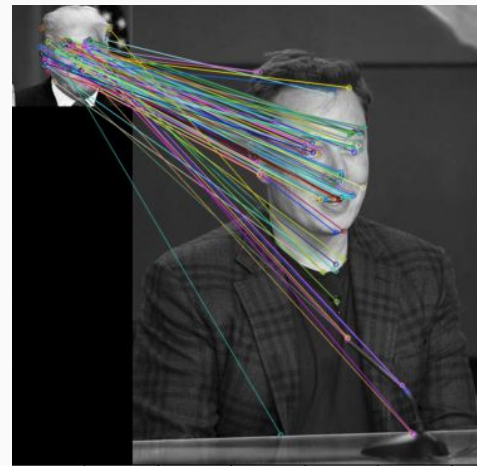
Test-1 (Method1)

Test image

Original-1 (wrong)
Similarity score: 116/260
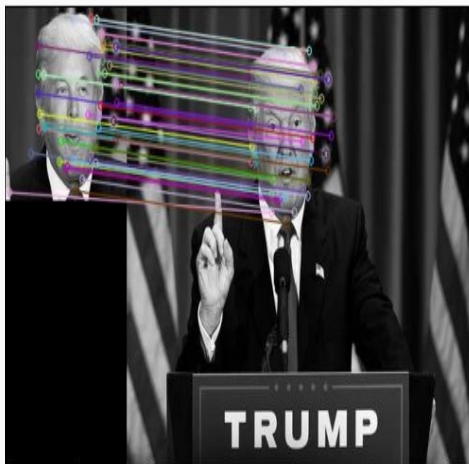Score of correct image: 95/260

Original-2 (wrong)
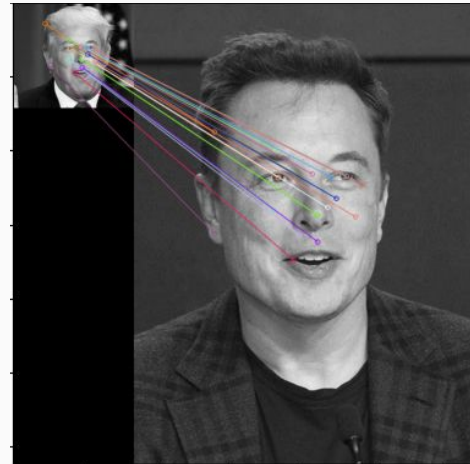Similarity score: 116/260
Score of correct image: 105/260

Test-1 (Method2)

Test image

Original-1 (correct)
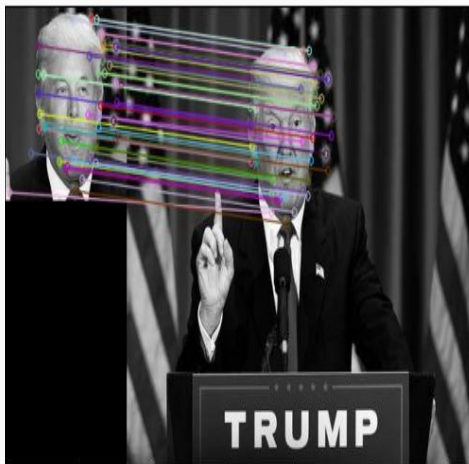Similarity score: 49/99

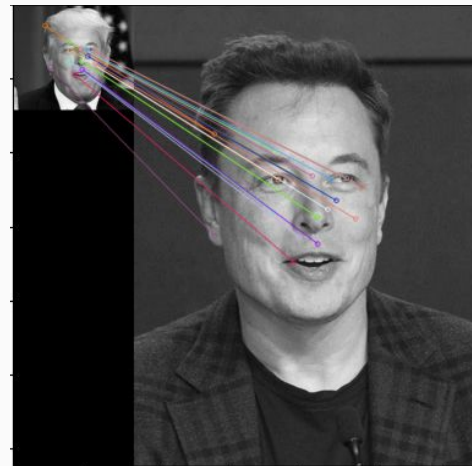Original-2 (correct)
Similarity score: 18/99

Test-1 (Method3)

Test image
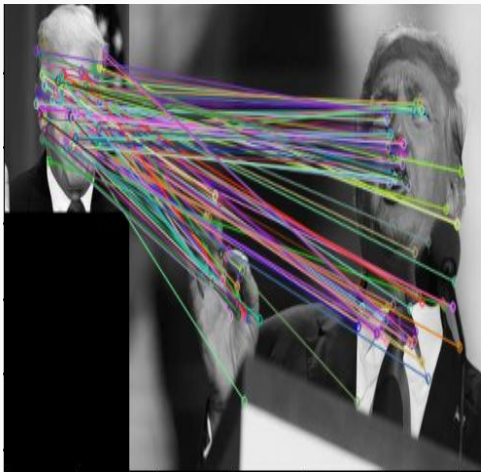
Original-1 (correct)
Similarity score: 149/198

Original-2 (correct)
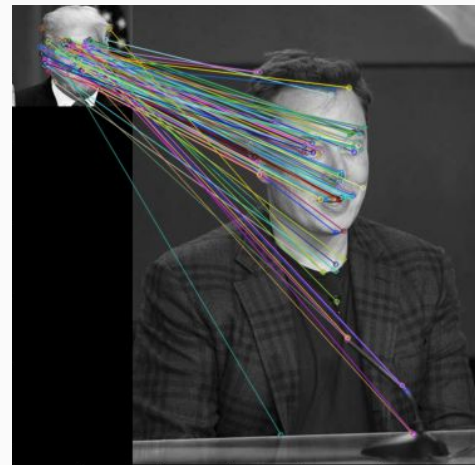Similarity score: 116/198

Test-2 (Method1)

Test image

Original-1 (wrong)
Similarity score: 147/500
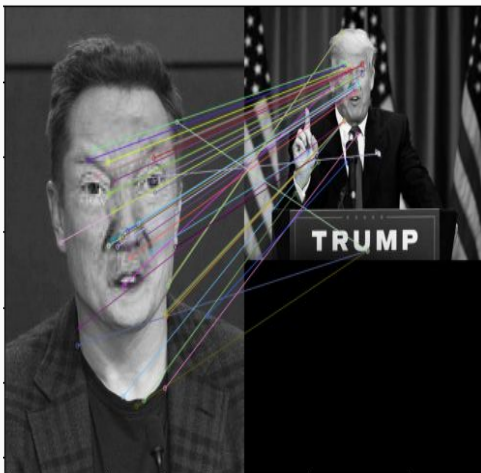Score of correct image: 118/500

Original-2 (correct)
Similarity score: 155/500

Test-2 (Method2)

Test image

Original-1 (correct)
Similarity score: 42/443

Original-2 (correct)
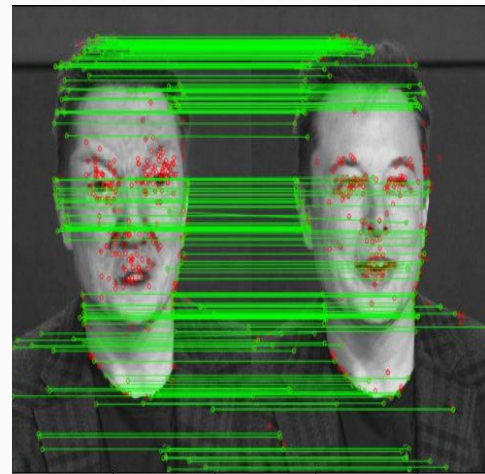Similarity score: 184/443

Test-2 (Method3)

Test image

Original-1 (correct)
Similarity score: 479/886

Original-2 (correct)
Similarity score: 622/886

Note

When face of person B is put over image of person A, then major features are corresponding to image of person hence the similarity score corresponding to image of person A is higher (refer to slide 5 and 8 where person A refers to Donald Trump and Elon Musk respectively).

When features other than face (stage, dress and miscellaneous objects) are significant in the image, method 2 and method 3 gives greater similarity corrresponding to those features and hence correct output.
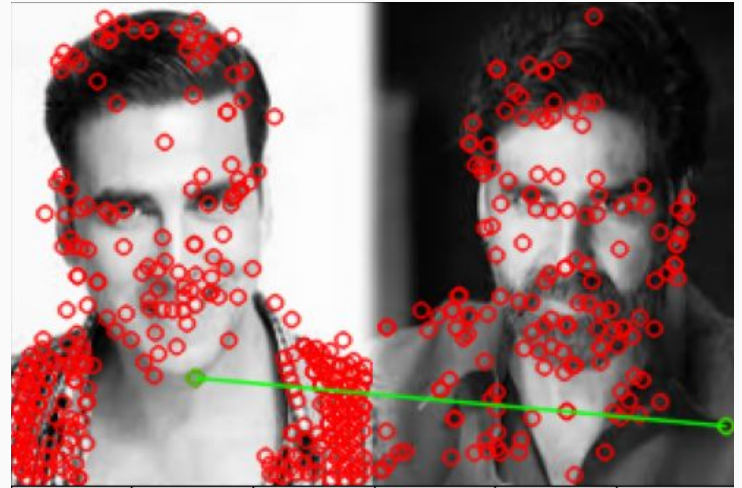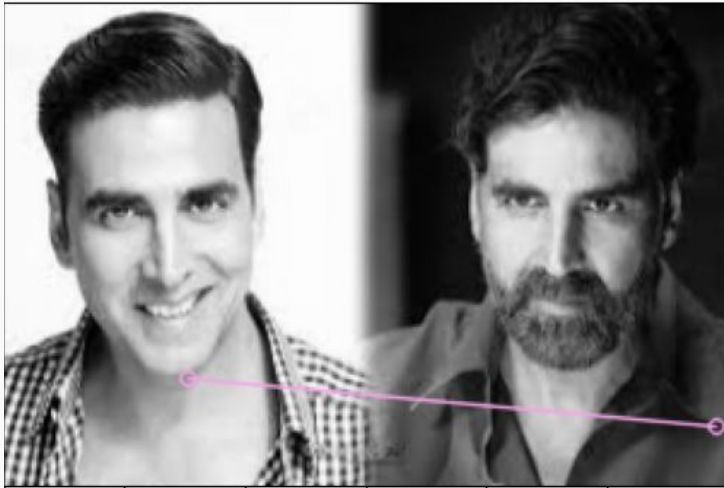
Beard output-1

Beard output-2
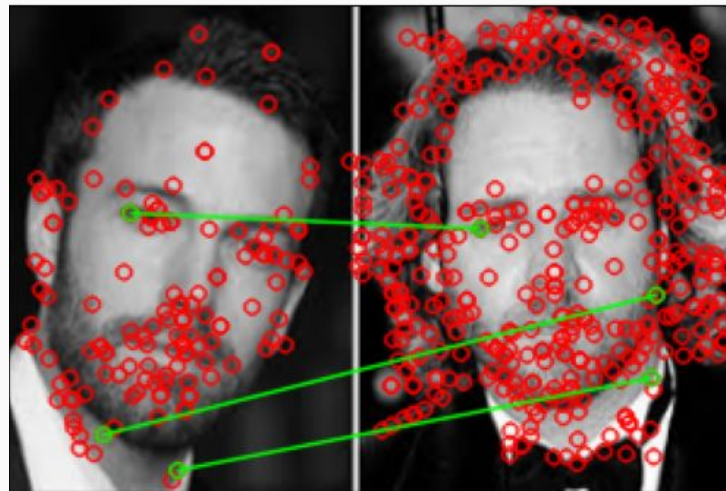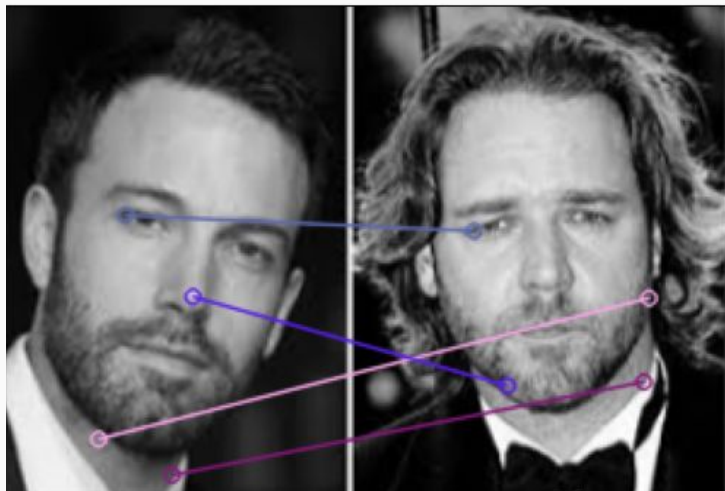
Beard output-3

Note -2

Between method 2 and method 3, method 2 focuses more on explicit and distinct features in the image like facial features.

Method 3 on the other hand focuses more on the comparison of outlining structure and skeleton of the features (outlined shape and size).

Summary

- Method 2 and method 3 takes around 16-18 seconds on average to process the dataset of size 300 while method 1 takes nearly 3 seconds.
- Method 1 has lower accuracy than method 2 and method 3.
- Images that compare beard and no beard showed mixed output. In some cases, other features like eyes and nose came out properly while in some cases the features are incorrectly marked.

Refining the code further. Doing minor optimisations and making the codemore structured

Testing the algorithm for different possibilities

21 June-22 June	23 June-24 June	25 June-26 June	27 June

Writing code corresponding to beard and twin case

Report work + Summarising