German University in Cairo
Department of Digital Media Engineering and Technology
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DMET 901: Computer Vision

Assignment 1

This assignment aims to test your knowledge of image processing techniques. This is to be done by providing some input images, alongside the correlated output of desire. Image processing techniques subjects of testing are Arithmetic Operations, and Geometric Operations. This assignment is divided into three sections as defined below.

Color Correction

In this section, you are asked to edit two input images, then combine them in order to produce the final output. Starting by the first input image, shown in Figure 1, the image brightness need to be edited in order to give a flash bang effect. As shown in Figure 2, the contrast effect fades out towards the right end of the image. In the case of the second input Image, shown in Figure 3, geometric editing is needed before overlaying with Figure 2 in order to produce the final output shown in Figure 4.

Figure 1

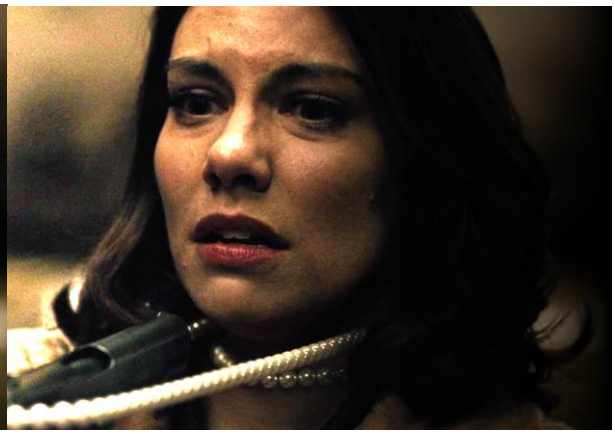

Figure 2

Figure 3

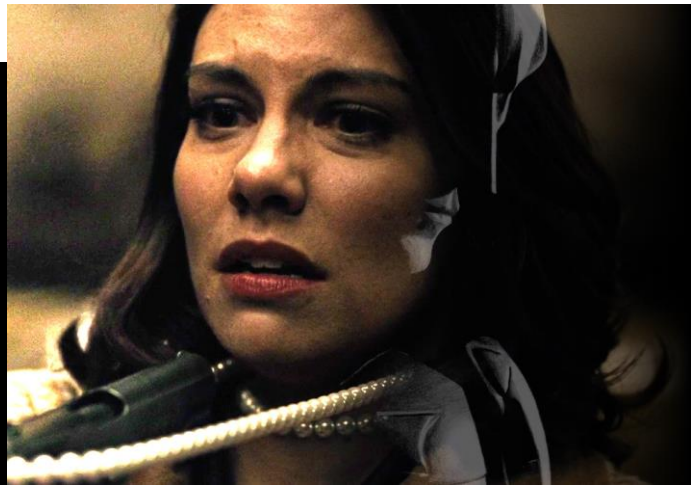

Figure 4

Fitting Frames

In this section, the task is to fit the image shown in Figure 5 inside the frames in figures 6 and 7, to produce figures 8 and 9. In figures 5, 6, and 7, all images are with the same perspective, therefore affine is sufficient to solve this problem.

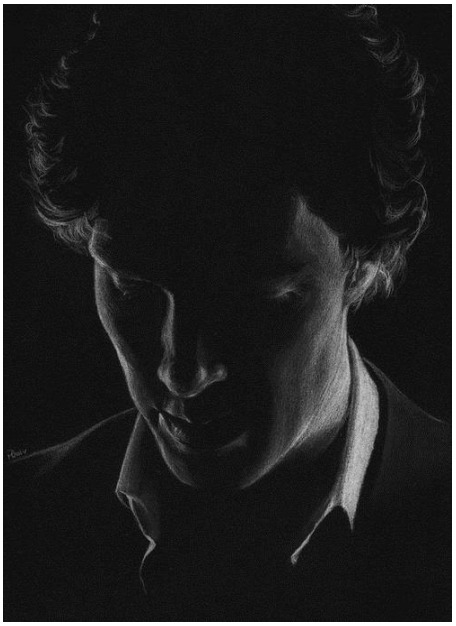

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Different Perspective Frame

In this section, you are asked to fit the image in Figure 5 in the frame shown in Figure 10. The perspective of the frame is different from the perspective of Sherlock. Thus, using affine will result in the output shown in Figure 11. However, the output of desire is shown in Figure 12.

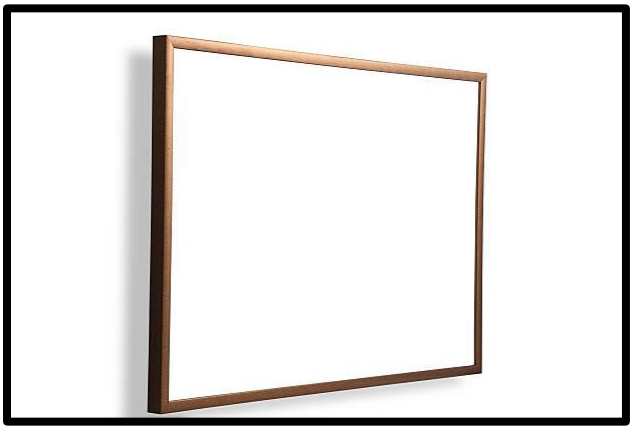

Figure 10

Figure 11

Figure 12

Assignment Regulations

- You will work on this assignment *in teams of two*.
- The deadline is on Wednesday 17th of October.
- The assignment is to be implemented using openCV on either Java, C++, or Python.
- Images to work on are available on the course page under the name of imagesA1.zip.