CSCI 631 Foundation of Computer Vision
HW 03

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1. Image used:

2. In image segmentation tasks, the trade-off is evident with respect to color and space; hence, experimentation is the best way to conclude. Some images have a particular color space than others. Also, we must test the outcome by keeping various weights in mind. As mentioned, we must keep image properties to select the suitable color space, some images might be converted to grayscale while others to LAB. Regarding methodology, kmeans algorithm must be applied to chosen attributes to segment image.
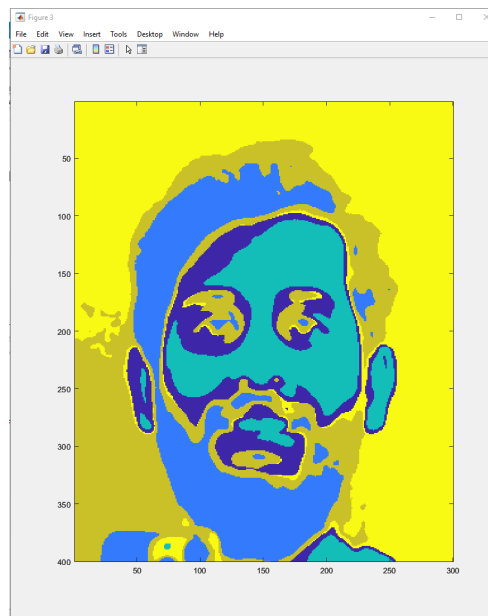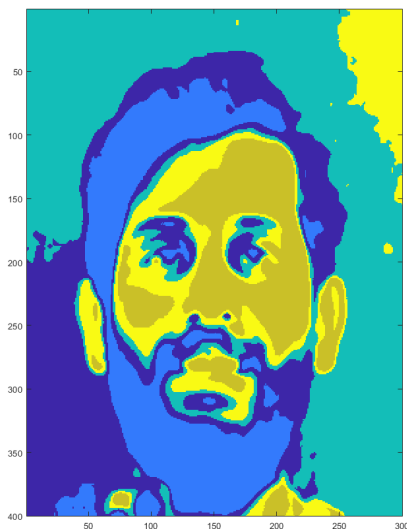
3. To find the edges, the Canny filter suits better than Sobel since it is second order and produces the best results. We can work with threshold low and high values, along with this we can also tweak sigma(Standard deviation) to get better results.
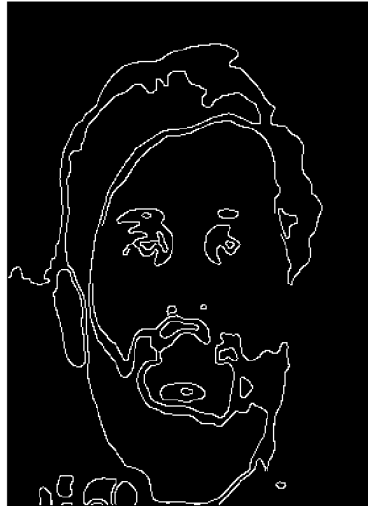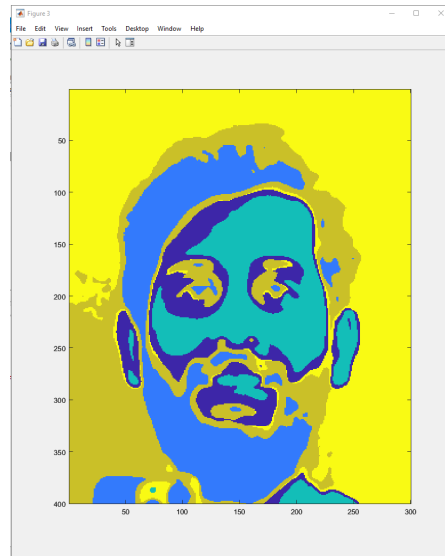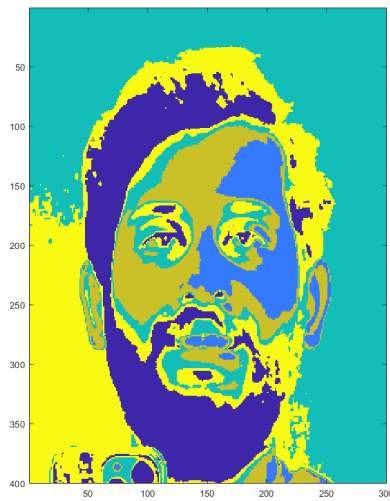

4. I tried to generate a boundarymask and use imoverlay function to add edge to the cartoon image, but ran into some errors and hence couldn't complete the assigned task.
5. I showed the image to my cousin, and he said he could recognize the image as me, and thought it was much like an instagram filter.
6. Conclusion:
    This assignment was open-ended, and forced me to go back to Matlab docs all the time. I found really interesting having learnt the basics of image segmentation. The first challenge I faced was to understand the attributes of K-means algorithm, and the docs were very helpful.
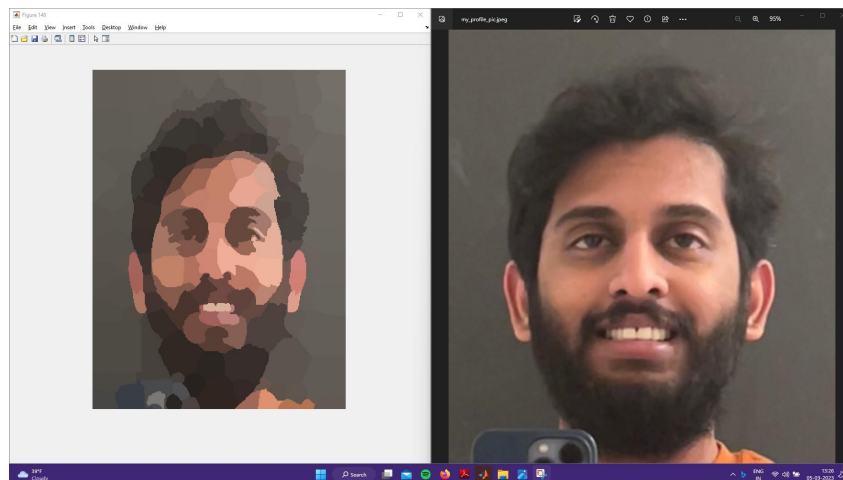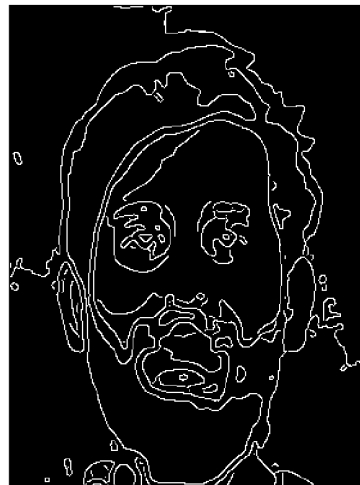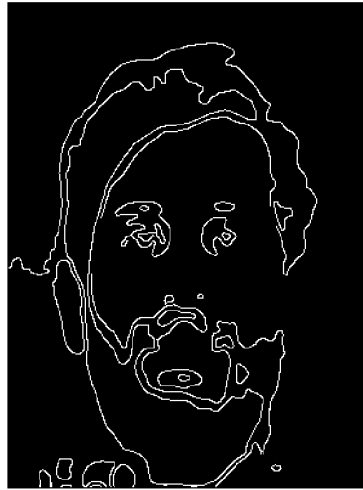

    I began understanding the basics of superpixels, later moved on to tweaking the k-means attributes, and found better results doing so.

I then went on to extract canny edges of the image using threshold values and sigma parameters.

Changing the sigma value gave a better/smooth edge of the image.