Project 1: Hybrid Images

Points Estimate:
I am expecting **100 Marks** for project 1.
Following is the break down of my estimated points:-

1. 45 points for implementation to create hybrid images from two aligned input images.
- Completed the assignment with 3 sets of images.

2. 25 points for illustration and additional results:
15 points for FFT images;
10 points for including at least two examples beyond the first (including at least one failure).

3. 10 points for quality of results (e.g., 0=poor 5=average 10=great 15=amazing)
- Quality is great. (10 Points)

4. 20 points for two image enhancement tasks (10 pts each), including explanation and display of results.
I completed two tasks out of three. Contrast Enhancement and Color Enhancement (20 Points)

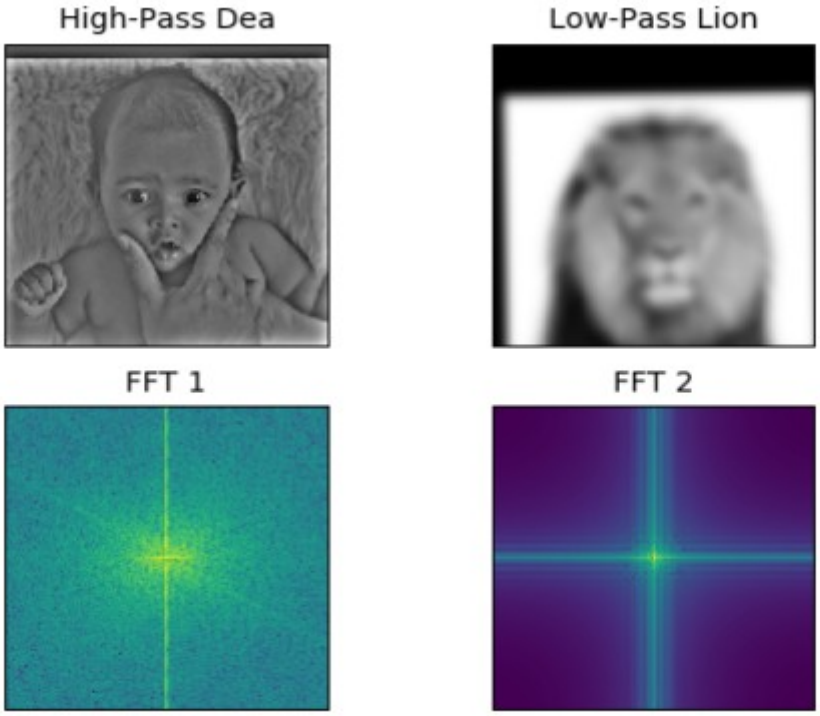
Bells and Whistles:
I am expecting 25 marks from Bells and Whistles
15 for Gaussian/Laplacian pyramids;
- presented the pyramids.

10 for third task of color enhancement
- completed color enhancement task.

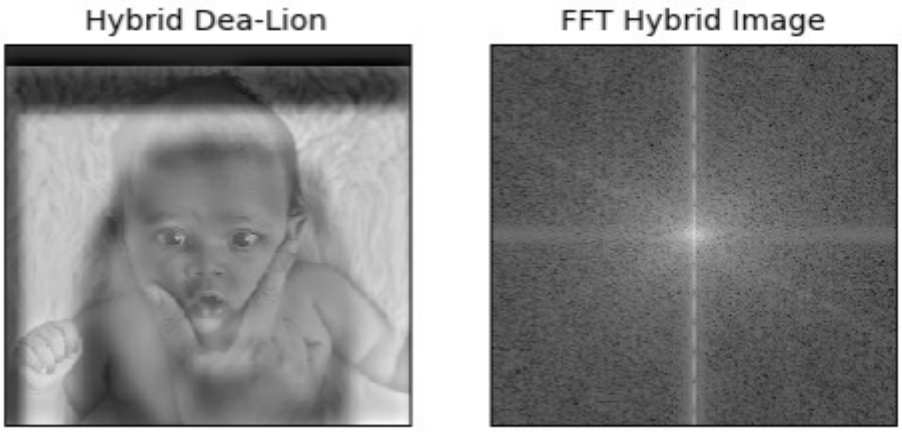
Part 1: Hybrid Images

Hybrid Images are those images is as two different images depending the distance from which we are looking at. Typically we generate hybrid images by combining two images, where one image goes to a high pass filter and the other a low pass filter

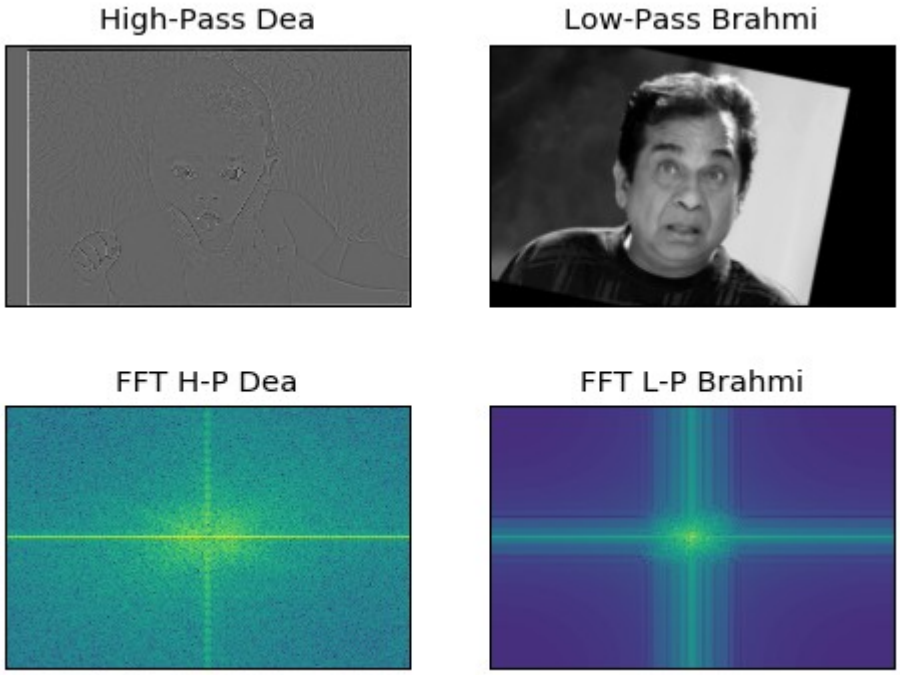
1. (Favorite)
Generation of a Hybrid Image with a cutoff_low of 4 and cutoff_high of 6.



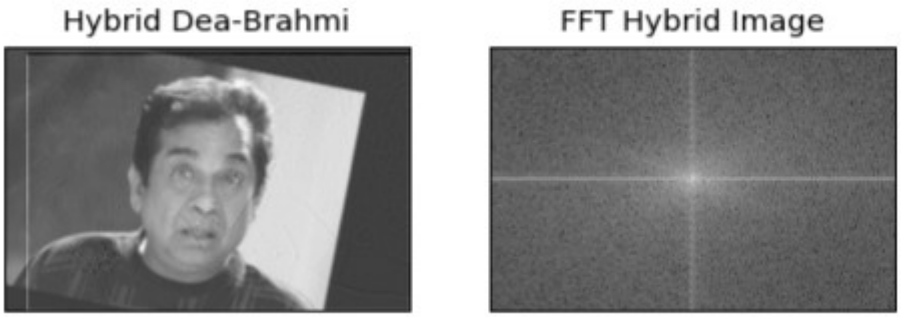
Hybrid + FFT



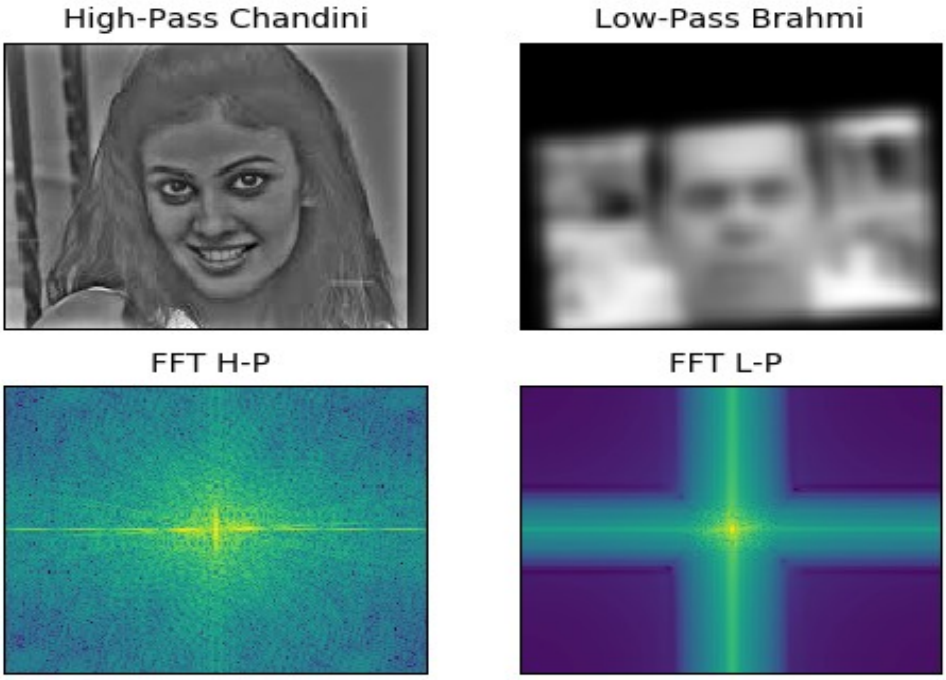
2. Brahmi + Dae (Not so favorite) (cutoff_low = 4, cutoff_high = 4)
Generation of Hybrid Images from two expressions of Dea and Brahmanandam .



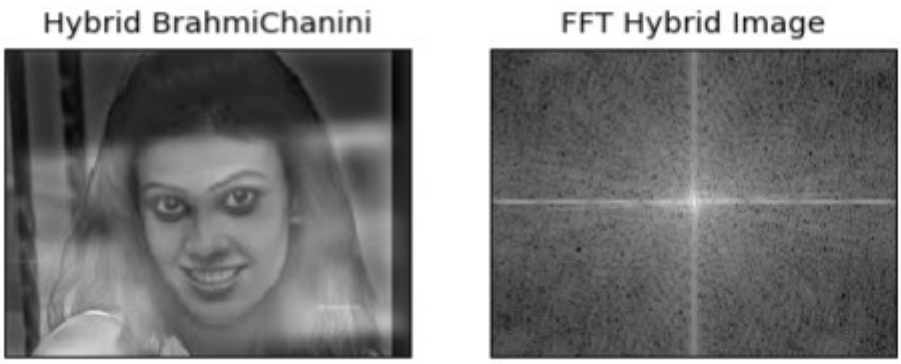
Hybrid + FFT (BrahmiDeaFinal)



3. Bramhi and Chandini (Good one)
Generation of Hybrid Image from two persons, Chandini and Brahmanandam.



Hybrid + FFT (BrahmiChandiniFinal)



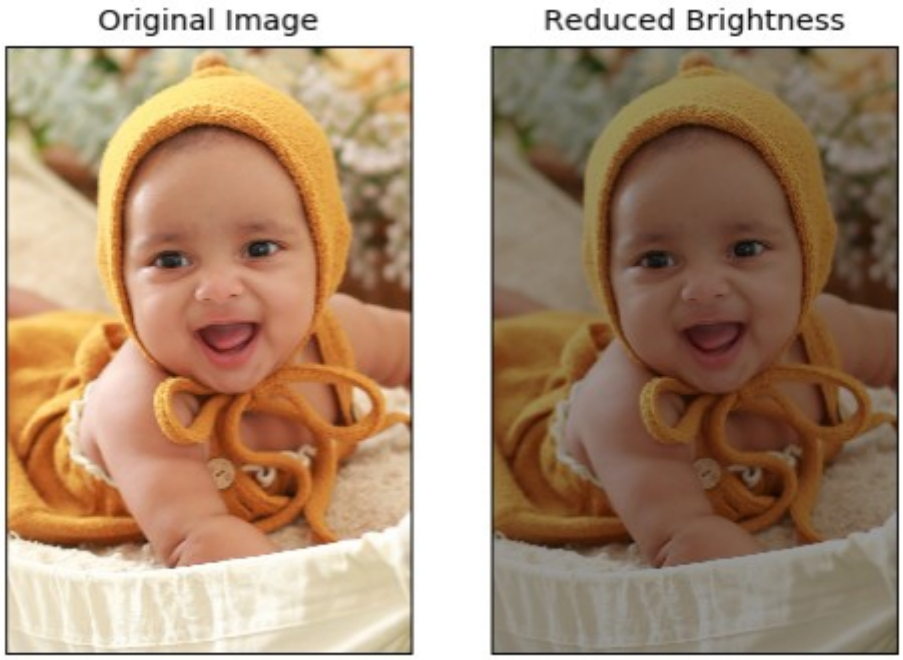
Part 2:

Contrast Enhancement

Contrast Enhancement achieved by using Contrast Limited Adaptive Histogram Equalization method. Below are the enhanced images. I have used a *clipLimit* of 1 on CLAHE and applied in on L of the LAB color space.

Color Enhancement

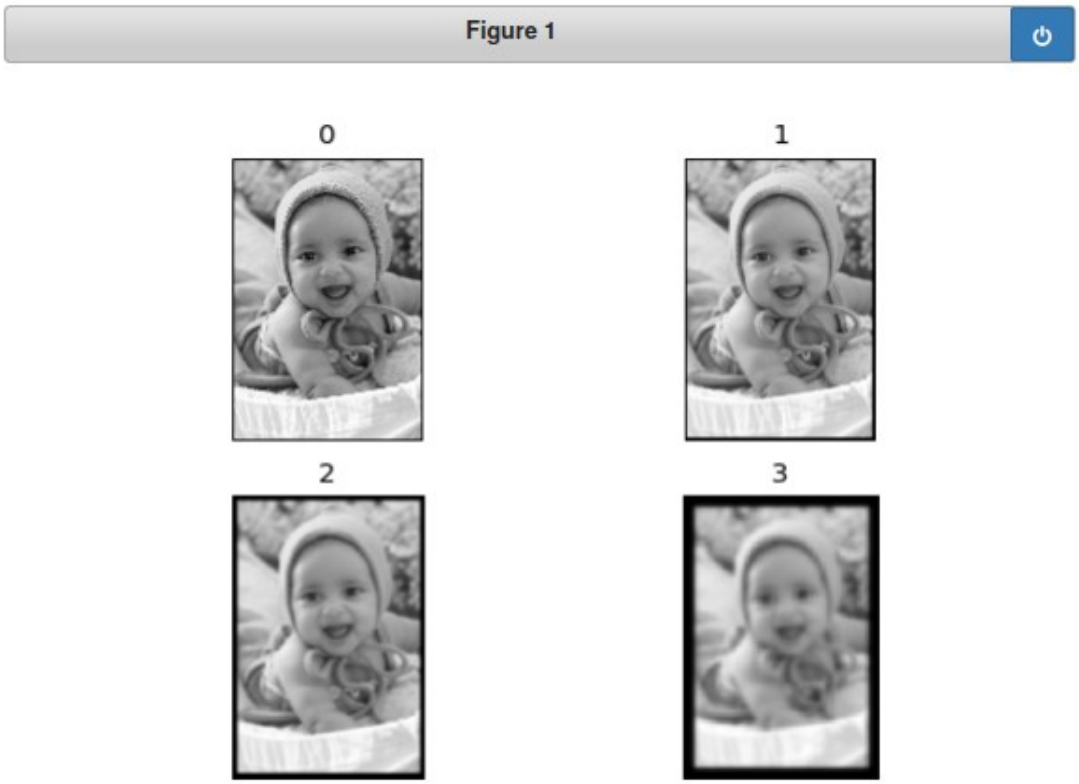
Color Enhancement achieved by converting the image to HSV color scope and reduced the brightness of the image. By changing the “s” value from the code, we can increase the saturation of the image.



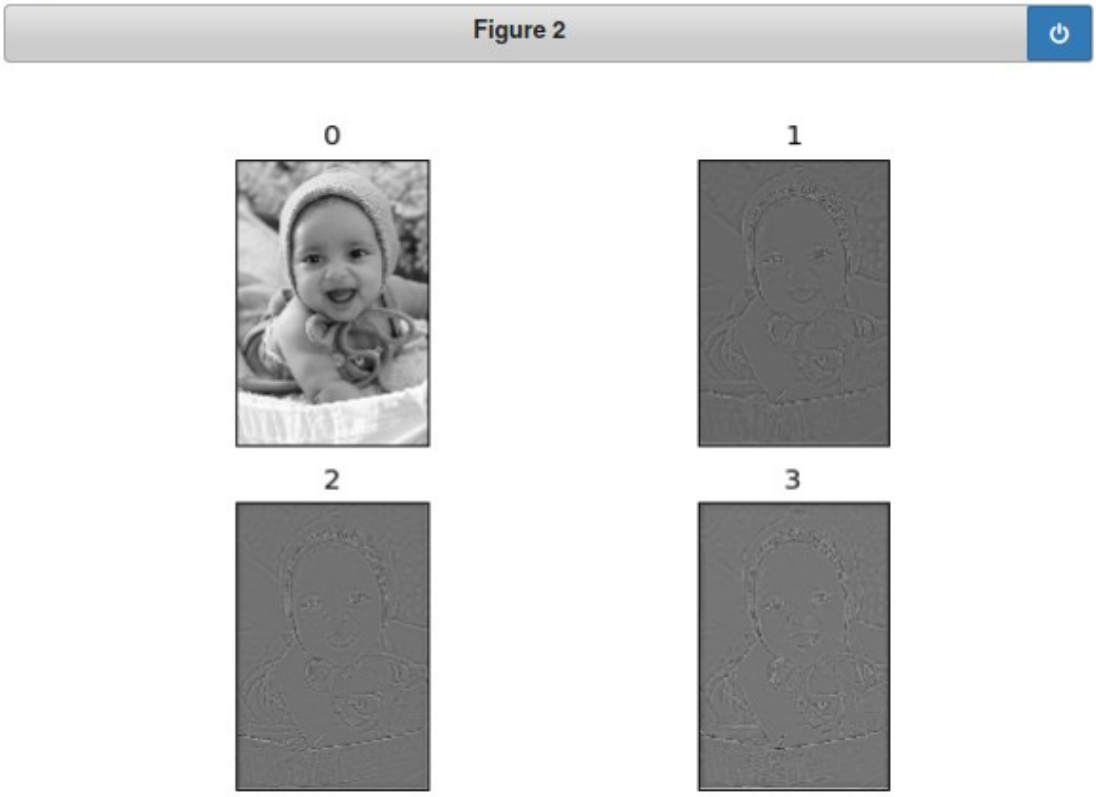
Bells & Whistles:

Gaussian and Laplacian Pyramids are using a sigma of 4

Gaussian Pyramids



Laplacian Pyramids



Color Shift

I have used a different approach in coding in comparison with other two tasks. Here I work on Lab color space and increase redness and decrease yellow by 0.15 % and 0.17 % respectively.