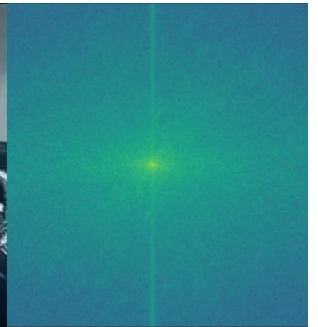
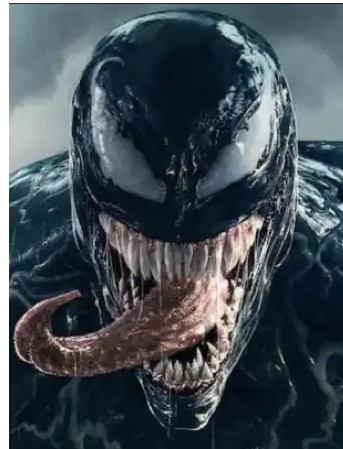
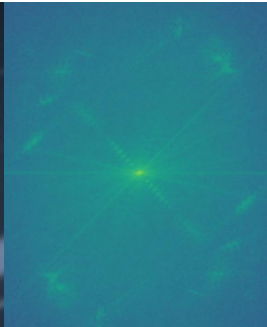


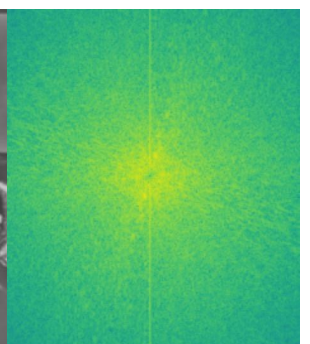
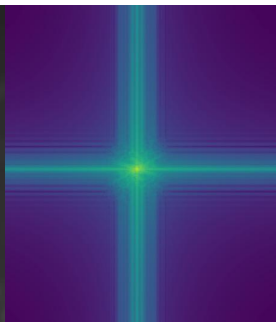
Part 1 Hybrid image:

Main result:

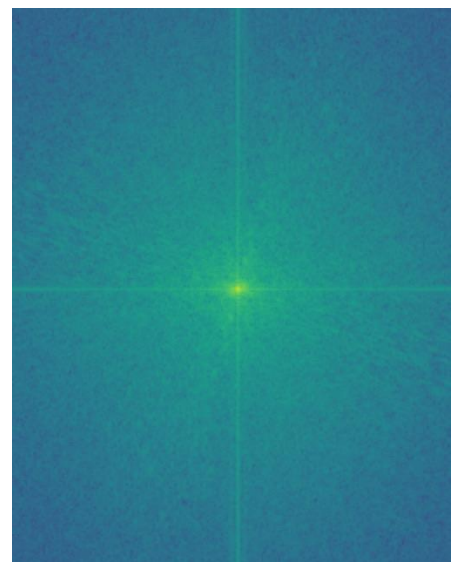
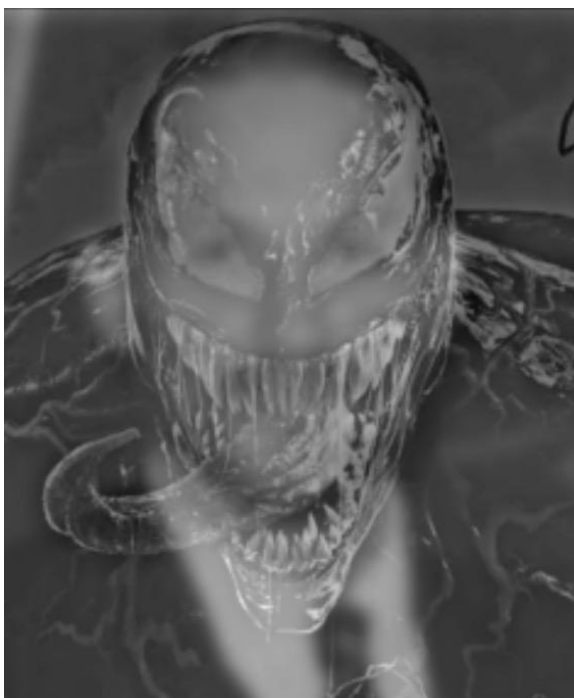
Original image:



filtered image:



Hybrid image:



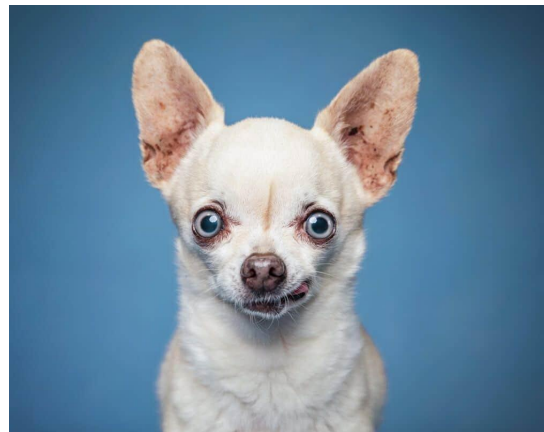
Description:

Basically, I took the power of the low frequency of Tom Hardy and the high frequency of Venom and composed (adding) them together to get the hybrid image. From the FFT image, it is clearly shown that low frequency is kept in the filtered Tom Hardy image and high frequency is kept in the filtered Venom image. As a result, we can get a nice hybrid image.

The reason I chose this pair of images is that the venom has a lot of details that can be used as a perception cue similar to the provided cat image. My cutoff_low is 5 and cutoff_high is 8 by experimenting a lot to get the best result.

Additional images:

1. dog and cat:
original image:



Hybrid image:



2. dog and person
original image:



Hybrid image:



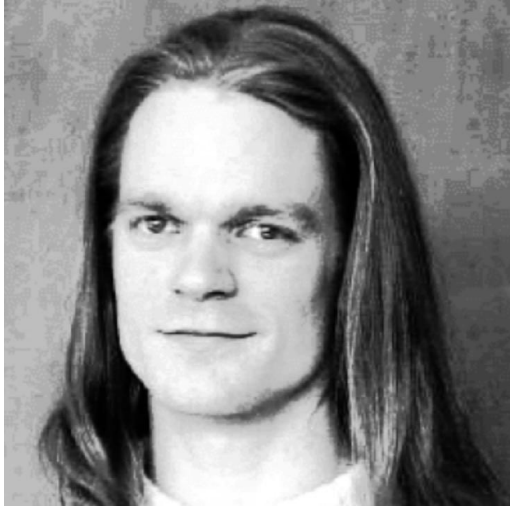
Part 2:

1. Contrast Enhancement:

Original image:



After **Histogram Equalization**:



Description:

Histogram Equalization can improve the contrast of the image, which maps the original distribution to a more uniform distribution with a wide range of intensity values, so the intensity values are more spread out to increase the contrast of the picture.

Cited: OpenCV

2. Color Enhancement

Original image:



Modified image:



Description:

I change the colorspace to HSV, then increases the V channel(Value) to enhance the color effect.

3. Color shift:(B&W)
Original image:



More red:



Less yellow:



Description:

In LAB space, A channel stands for Red/Green Value, b channel stands for Blue/Yellow Value. Thus, we just need to modify A channel to change the red color and modify B channel to change the yellow color.

Part 3: B&W

1.Color hybrid result:



Coloring is better to provide a perception cue only using one frequency image instead of using both.

2.B&W

2.1 Gaussian pyramid:



2.2 Laplacian Pyramids:



Source: all pictures are from google