Project Hybrid images Writeup

Instructions

- Describe any interesting decisions you made to write your algorithm.

- Show and discuss the results of your algorithm.

- Feel free to include code snippets, images, and equations.

- Use as many pages as you need, but err on the short side

- **Please make this document anonymous.**

In the beginning...

The cutoff frequency has a great impact over the quality of the hybrid images as it should be chosen carefully. The cutoff frequency manage how far will each image contribute in the final image so it may mask one of the image and make it disappear totally. As the hybrid image is summation of the low frequencies from one image and the high frequencies from another. See Equation 1.

$$Hybrid image = low frequencies(image1) + high frequency(image2) \quad (1)$$

Interesting Implementation Detail

In applying the hybrid algorithm in Einstien and Marlyin , it was appear that in low cutoff frequencies Einstien didn't appear at all. Not because of Marlyin beauty but because of the unwise choose of the cutoff frequency

My code snippet highlights an interesting point.

```
cutoff_frequency = .5
low_frequencies, high_frequencies, hybrid_image = gen_hybrid_image(
    image1, image2, cutoff_frequency)
```

A Result

1. Result 1 was a total failure, because we choose a very small cut of frequency

2. Result 2 (Figure 1, left) was surprising, because Einstien didn't appear as we expected instead it was like a shadow at the back of the image.
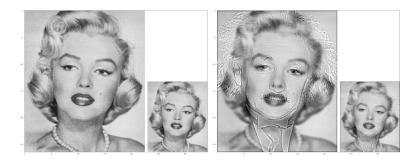
Figure 1: *Left:* My result was spectacular. *Right:* Curious.

3. Result 3 (Figure 1, right) blew my socks off, because the features of both appear clearly.

My results are summarized in Table 1.

Condition	cutoff Frequency
Test 1	.5
Test 2	20

Table 1: Stunning revelation about the efficiency of my code.