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Impr – ex3

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- Matlab Version: R2015a

- List of files: EX3.zip that includes:

- GaussianPyramid.m - construct a Gaussian pyramid of a given image.

- LaplacianPyramid.m - construct a Laplacian pyramid of a given image.

- LaplacianToImage.m - reconstruction of an image from its Laplacian Pyramid.

- renderPyramid.m - function to display a given pyramid.

- displayPyramid.m - display a given pyramid.

- pyramidBlending.m - blend two given images into one blended image.

- blendingExample1.m - an example of blending two given images.

- blendingExample2.m - an example of blending two given images

- expand.m - expands an image to double size, using a blurring mask.

- reduce.m - reduce image size to an half of its size, using blurring mask.

- buildGaussianMask.m - building a Gaussian filter.

- ImReadAndConvert - Reads a given image file and converts it into a given representation.

- Additional images:

- Hertzel.jpg

- Rasta.jpg

- Mask\_1.jpg

- Sacher Garden

- Blue Lake.jpg

- Mask\_2.jpg

- Question from section 3.2:

The coefficient vector is a function to convert the freq. to the real number. Each level of the Laplacian Pyramid contain different group of freq. that the original image contain. So this is the reason we need to multiply every level in a different coefficient number…

- Question from section 4.2:

Different image filters:

The size of the image filter determine the width of the freq. in the levels of the pyramid,

so the size of the filter effect the color matching and the stitching in the blending action. From play with it, I learned that small filter create a less color matching and a rough seams (means you can see them easily), and large filter gives a smooth blending and soft seams (means the blending looks more natural).

Different number of levels:

The number of levels effect on the quality of the blend. The last level of the pyramid contain all the lowest freq. that weren’t in the other levels, that means that the more levels there is in the pyramid, the finer splitting into freq. And that means less freq. in the last level, and the result is less smooth image, or in a different words, better sharpen quality picture.