# Part 1: Gaussian Pyramid

```
images = ["../images/CARTOON.jpg", "../images/flowergray.jpg", "../
images/kitty.jpg", ...
    "../images/polarcities.jpg", "../images/text.jpg" ];

filter = [0.25,0.25; 0.25,0.25];

for image = images

    img = im2double(imread(image));
    [height, width] = size(img);

    n = log2(height);

    figure;
    subplot(3, 3, 1);
    imshow(img);
    title('Original image')

    for i= 1:n
        img = imfilter(img, filter, 'replicate', 'same');
        [height, width] = size(img);

        % Half size
        img = img(1:2:height, 1:2:width);

        % Produce same size of original image
        biImage = imresize(img, 2^i, 'bilinear');

        subplot(3, 3, 1+i);
        imshow(biImage);
        title(sprintf('%d times filtering', 2 ^ i));
    end
end
```

Original image

2 times filtering

4 times filtering

8 times filtering

16 times filtering

32 times filtering

64 times filtering

128 times filtering

256 times filtering

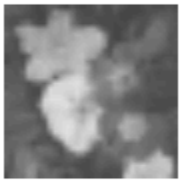


Original image

2 times filtering

4 times filtering

8 times filtering



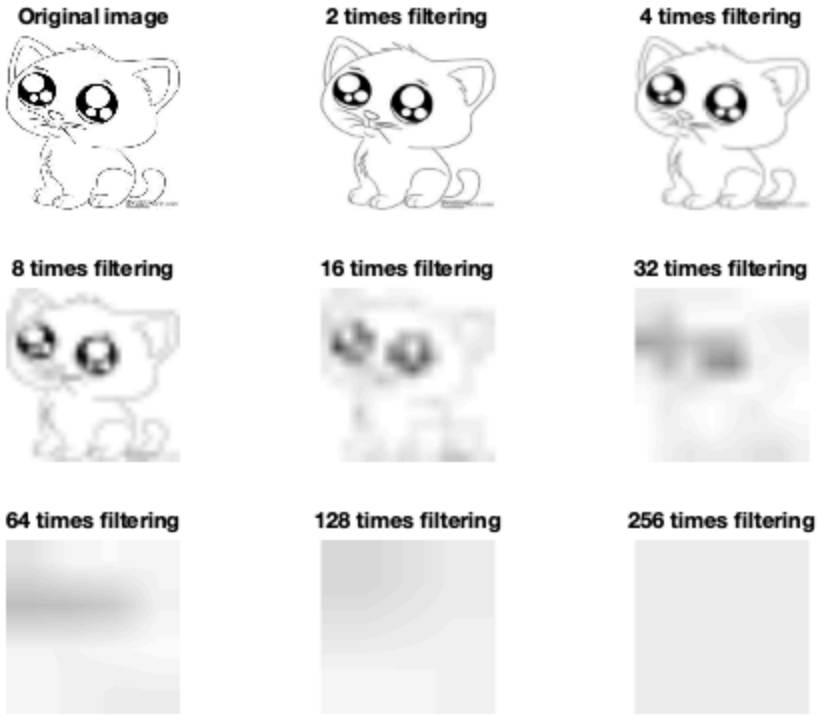
16 times filtering

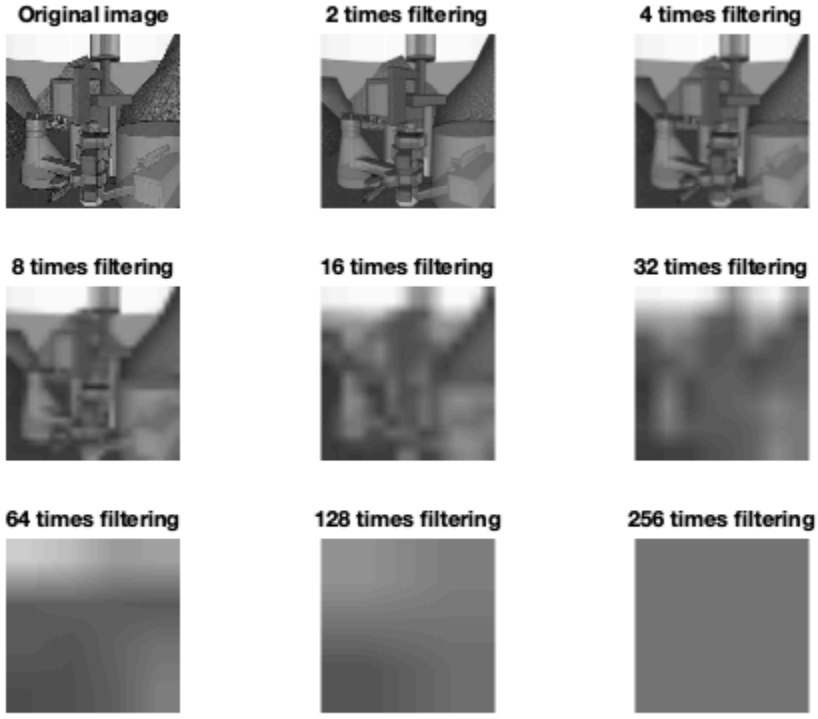
32 times filtering

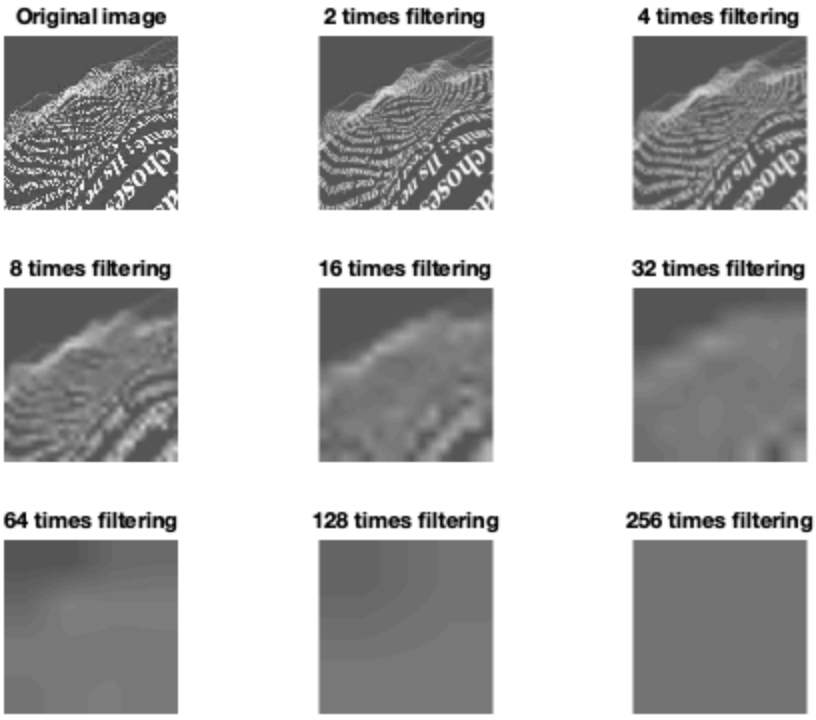
64 times filtering

128 times filtering

256 times filtering


Original image
2 times filtering
4 times filtering
8 times filtering
16 times filtering
32 times filtering
64 times filtering
128 times filtering
256 times filtering


Original image
2 times filtering
4 times filtering
8 times filtering
16 times filtering
32 times filtering
64 times filtering
128 times filtering
256 times filtering

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