LAB 10 – CBIR
HOG Features

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Ques. Implementation of Histogram of Orientation Gradient (HOG) features

Code:

```
srcFiles = dir('imags\*.png');

for i=1:5

    %k = i-1;

    img = imread(strcat('imags\',srcFiles(i).name));

    [hog_2x2, vis2x2] = extractHOGFeatures(img,'CellSize',[2 2]);

    [hog_4x4, vis4x4] = extractHOGFeatures(img,'CellSize',[4 4]);

    [hog_8x8, vis8x8] = extractHOGFeatures(img,'CellSize',[8 8]);

    % Show the original image

    figure;

    subplot(2,3,1:3); imshow(img);

     % Visualize the HOG features

    subplot(2,3,4);

    plot(vis2x2);

    title({'CellSize = [2 2]'; ['Length = ' num2str(length(hog_2x2))]});

     subplot(2,3,5);

    plot(vis4x4);

    title({'CellSize = [4 4]'; ['Length = ' num2str(length(hog_4x4))]});

     subplot(2,3,6);

    plot(vis8x8);

    title({'CellSize = [8 8]'; ['Length = ' num2str(length(hog_8x8))]});

end
```

Screenshot for 5 different input and output images: