```
clc;
clear all;
close all;
%commands to clear all windows, figures etc
I=imread("Vidit.jpg");
if size(I,3)==3
    Ig=rgb2gray(I); %Image to grayscale
end
figure
imshow(Ig);
title("Original Image");
[Ia,Iv,Ih,Id]=dwt2(Ig,"haar"); %performing wavelet transformation on an image
Ia2 = uint8(255 * mat2gray(Ia)); %converting the double type into the uint8 for image
subplot(2,2,1); %plotting all 4 figures in one figure window
imshow(Ia2); %showing the approximation output of the input image
title('Approximation');
Iv2 = uint8(255 * mat2gray(Iv));
subplot(2,2,2);
imshow(Iv2); %vertical edges output
title('Vertical');
Ih2 = uint8(255 * mat2gray(Ih));
subplot(2,2,3);
imshow(Ih2);%horizontal edges output
title('Horizontal');
Id2 = uint8(255 * mat2gray(Id));
subplot(2,2,4);
imshow(Id2); %detailed edges output
title('Detailed');
```

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