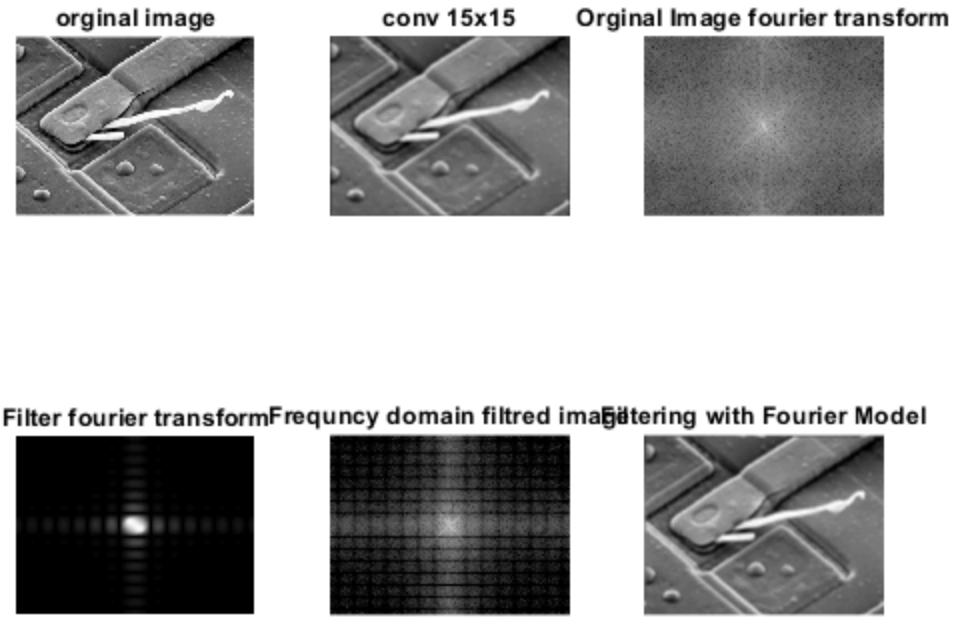
```
x = (imread('circuit.tif')); %read image for double
x=double(x);%convert orginal image double for calculations
subplot(2,3,1)
imshow(uint8(x))
title('orginal image')

%average filter
filter = ones(15,15)/15^2;
c = conv2(x,filter,'same');
subplot(2,3,2)
imshow(uint8(c))
title('conv 15x15')

%image fourier transform
fImage = fft2(x);
fImageShow = fftshift(fImage);%calculate fourier
fImageShow= log(1+fImageShow);%for easy to show log transform
subplot(2,3,3)
imshow(abs(fImageShow),[])
title('Orginal Image fourier transform')

%filter fourier transform
row = length(x(:,1));%image row size
colum= length(x(1,:));%image colum size
fFilter = fft2(filter,row,colum);%calculate filter fourier but
 increase size because we multiply with image and it must same size
fFilterShow= fftshift(fFilter);%to show easy use fftshift for only
 show image
fFilterShow= log(1+fFilterShow);%to show easy use log transform
subplot(2,3,4)
imshow(abs(fFilterShow),[])
title('Filter fourier transform')

FiltredImage= fImage.*fFilter; %time domain convolution, frequncy
 domain multiplication
subplot(2,3,5);
imshow(abs(fftshift(log(1+FiltredImage))),[])
title('Frequncy domain filtred image')

final = ifft2(ifftshift(FiltredImage));%inverse of frequncy domain it
 is time domain
subplot(2,3,6);
imshow(abs(final),[])
title('Filtering with Fourier Model')


% These two images are very simalar These two imagese are blured and
 teorically we know on spatial domain filtered image these output
 should be same and as we see outputs are same however there is a
 black border because there is a not pad
```



Published with MATLAB® R2018a