

How to do DFT filtering with Matlab?

Target image is assumed to be saved in variable `I`

1- Obtain the Fourier transform

```
F = fft2(I)
```

2- Move the zero-frequency component to the center of the matrix

```
Fc = fftshift(F)
```

3- `Fc` has complex values. If you want to display the transform, you should take the absolute value. Also apply logarithm.

```
imshow(log(abs(Fc) + 0.0001))
```

4- Create your filter matrix `H` (it should be of the same size than image `I`)

5- Multiply the transform by the filter matrix

```
G = H.*Fc
```

6- Do inverse shifting and inverse transform

```
gi = ifft2(ifftshift(G))
```

7- Take the real part `g = real(gi)`