Tugas Pemrosesan Citra Biomedis

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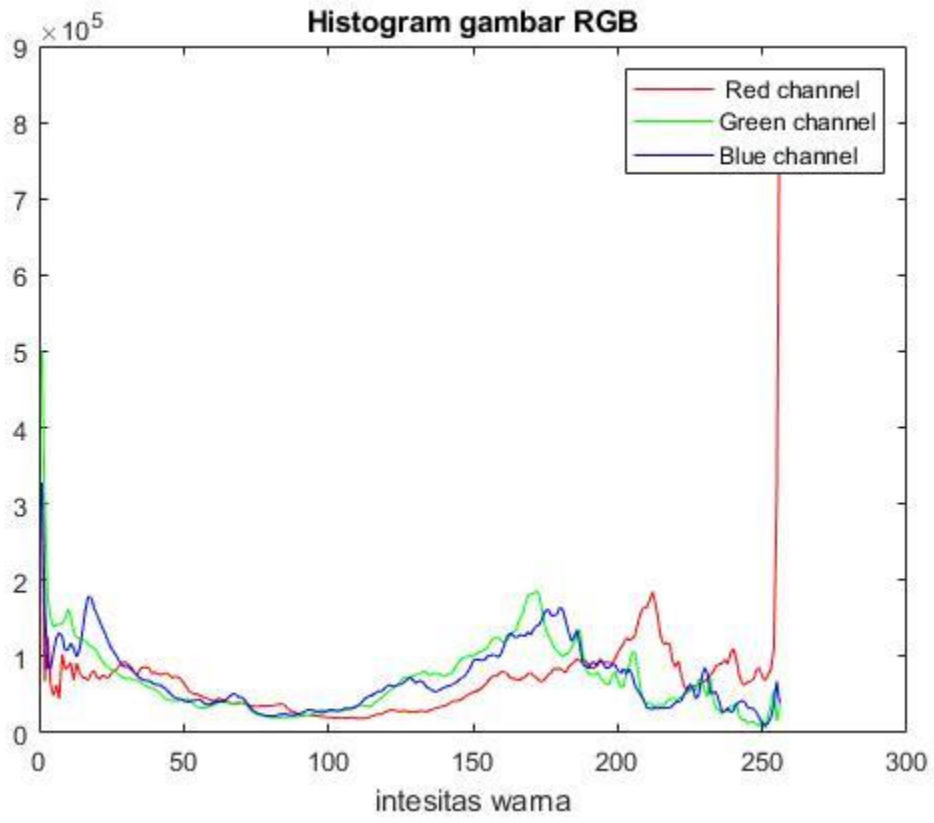
1. Mencari toolbox histogram dan mengimplementasikannya pada MATLAB

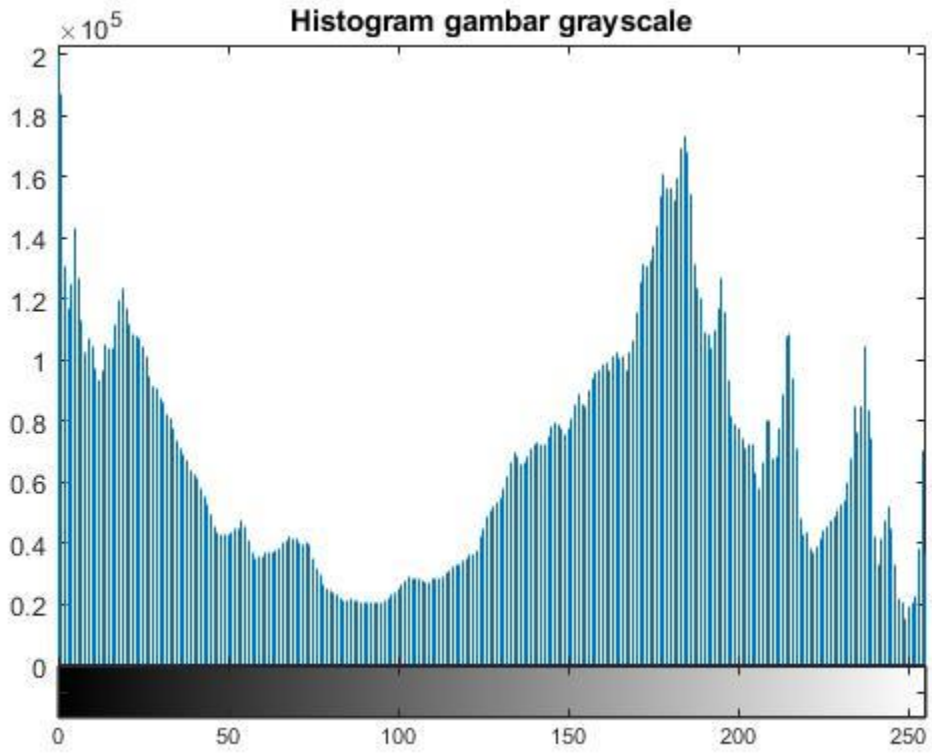
```
clc;
clear all;

I=imread('foto.jpeg');
R=imhist(I(:,:,1));
G=imhist(I(:,:,2));
B=imhist(I(:,:,3));
figure(1), plot(R,'r')
hold on, plot(G,'g')
plot(B,'b'), legend(' Red channel','Green channel','Blue channel');
xlabel("intesitas warna")
title("Histogram gambar RGB")
hold off,
```



*Mengubah menjadi grayscale

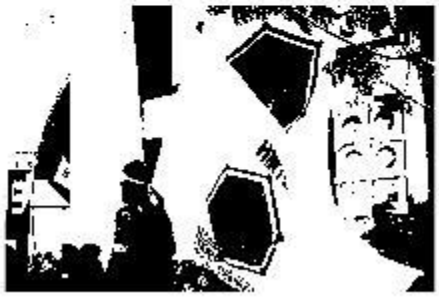
```
Ir=rgb2gray(I);
figure(2)
```

```
imhist(Ir)
xlabel("intesitas warna")
title("Histogram gambar grayscale")
```



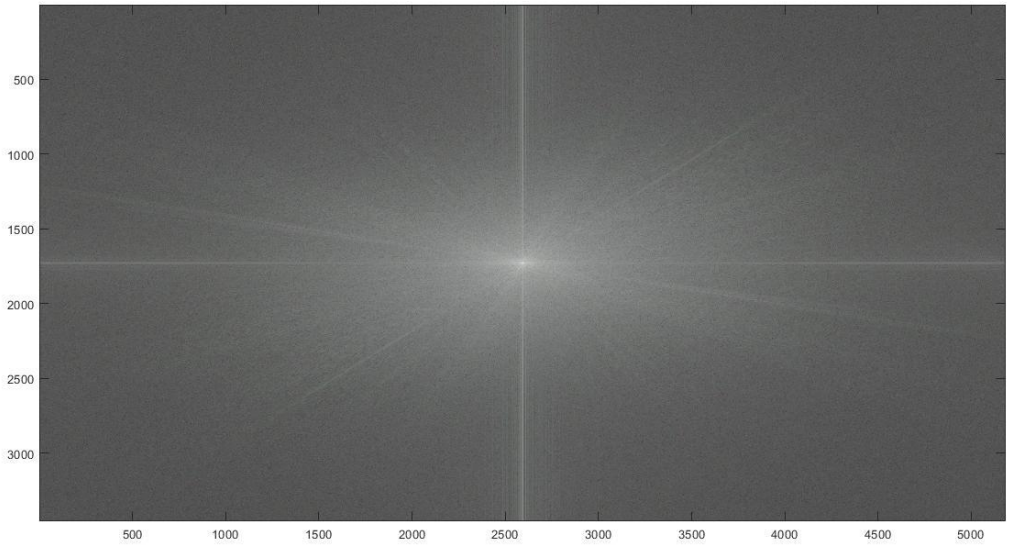
2. Mencari toolbox konvolusi dan mengimplementasikannya pada MATLAB

```
clc;
clear all;

pic = imread('foto.jpeg');
mask = [-1 -2 10; -1 8 -1; -3 -1 -1];
gray = rgb2gray(pic);
thresh = graythresh(gray);
imbw = im2bw(gray,thresh);

hasil=conv2(double(imbw),mask,'valid');
subplot(2,1,1)
imshow(pic)
subplot(2,1,2)
imshow(hasil)
```



3. Mencari toolbox FFT(Fast Fourier Transform) dan mengimplementasikannya pada MATLAB

```
I=imread('foto.jpeg');
F=fft2(I);
F = fftshift(F); % Center FFT

F = abs(F); % Get the magnitude
F = log(F+1); % Use log, for perceptual scaling, and +1 since log(0) is
undefined
F = mat2gray(F); % Use mat2gray to scale the image between 0 and 1
imagesc(F)
```



4. Hasil perhitungan 1 elemen fft menggunakan code

```
clc
clear;close all


A=[2  4  5  6;
   2  1  7  8;
   5  8  10  3];
[m,  n]=size(A);

for j=1:m
    for k=1:n
        x=A(j,k)*exp(-2i*pi*((1*j/m)+(2*k/n)))
    end
end
sum(x) % hasil dari f(1,2)
```