
Projeto 11

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Referências

GONZALEZ, R. C., WOODS, R. E. Processamento de Imagens Digitais. Editora Edgard Blucher, ISBN São Paulo, 2000. **Support MathWorks**, 2021. Disponível em: <https://www.mathworks.com/help/>. Acesso em: 18 de julho. de 2021.

```
% * Aplicar o PCA para compressão de imagens,utilizando uma quantidade
% de
% componentes principais.
% -- graficar numero de componetes principais vs PSNR
% -- utilize uma imagem de sua preferencia
% -- comente

clear; clc;close all

c_img=imread('balao.png');
g_image=rgb2gray(c_img);
g_image =g_image;

figure; imshow(g_image);

mypsnr =[];

vetor_nComp =5:5:90;

g_image_d=double(g_image);

g_image_d_m=mean(g_image_d);

g_image_d_m_adjusted=(g_image_d-g_image_d_m);

[coeff,score, ~ , ~, ~] = pca(g_image_d_m_adjusted);

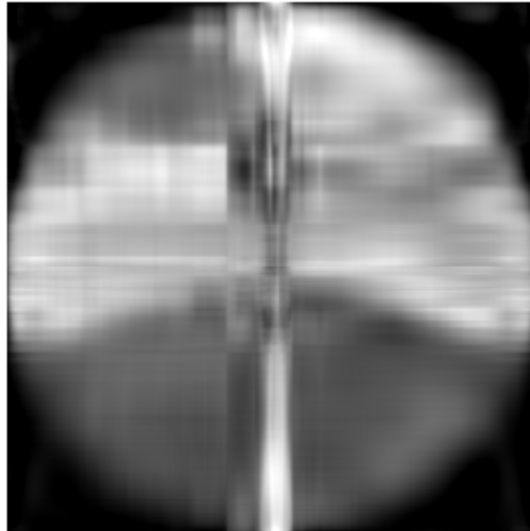
for nComp = vetor_nComp
    reconstruction = score(:,1:nComp)*coeff(:,1:nComp)';
    final_reconstruction=(reconstruction+g_image_d_m);
    final_reconstruction=uint8(final_reconstruction);
    figure; imshow(final_reconstruction); title(num2str(nComp))

    mypsnr = [mypsnr psnr(final_reconstruction,g_image)];
end

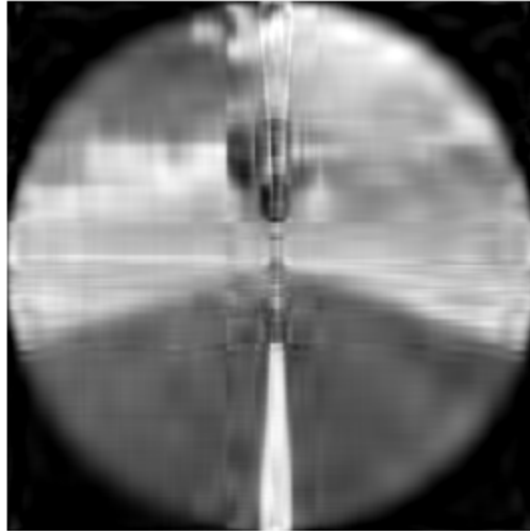
figure; plot(vetor_nComp,mypsnr,'o-')
```



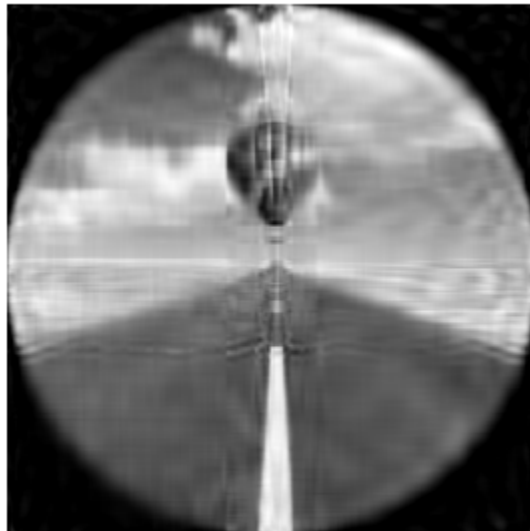
5



10



15



20



25



30



35



40



45



50



55



60



65



70



75



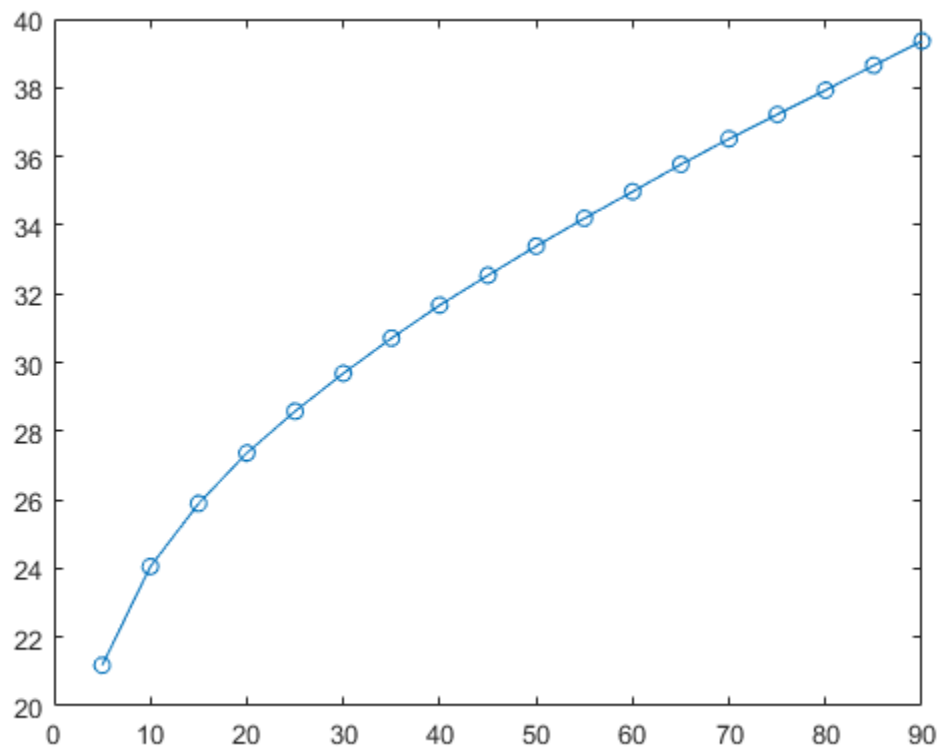
80



85



90



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