```
function res = smooth3(input_image, filter_size )

close all;

b = im2double(imread('messi_binary.jpg'));

c = imcomplement(b);

a = im2double(input_image);

a_hsv = rgb2hsv(a);          %取 hsv 图

a_half = a_hsv;

a_half(:,:,1) = imfilter(a_hsv(:,:,1), ones(filter_size)/(filter_size * filter_size),'replicate');

a_half(:,:,3) = imfilter(a_hsv(:,:,3), ones(filter_size)/(filter_size * filter_size),'replicate');

%上面对色调，亮度分量进行滤波


res = a_hsv;

res(:,:,1) = a_half(:,:,1) .* c + a_hsv(:,:,1) .* b;

res(:,:,3) = a_half(:,:,3) .* c + a_hsv(:,:,3) .* b; %把色调、亮度分量进行叠加处理

res = hsv2rgb(res);                          %得到结果


imshow(res,[]);


end
```

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