extract regions detected by watershed segmentation

Asked by [mariem farhat](http://www.mathworks.in/matlabcentral/answers/contributors/3510980-mariem-farhat" \o "Reputation: 0) on 22 May 2013

Hello,

I have found this code in image processing toolbox of matlab for image segmentation through watershed function:

<http://www.mathworks.com/help/images/examples/marker-controlled-watershed-segmentation.html>

Really, I gaven't understood the code, and I want to extract regions detected after segmentation with the function watershed and represent each region with its dominant color. So can you help me?

I want to extract those regions, so where find them?

Thanks

**1 Comment**

[Image Analyst](http://www.mathworks.in/matlabcentral/answers/contributors/1343420-image-analyst) on 22 May 2013

[Link](http://www.mathworks.in/matlabcentral/answers/76628#comment_150324)

Related to her other question: <http://www.mathworks.com/matlabcentral/answers/65055-dominant-color-for-an-rgb-image>

[](http://www.mathworks.in/matlabcentral/answers/contributors/3510980-mariem-farhat)

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**2 Answers**

Answer by [Image Analyst](http://www.mathworks.in/matlabcentral/answers/contributors/1343420-image-analyst) on 22 May 2013

Once you have the binary image, you simply call regionprops() for each color channel to get the color for that color channel in each labeled region. See my demos for examples:<http://www.mathworks.com/matlabcentral/fileexchange/?term=authorid%3A31862>

% Extract the individual red, green, and blue color channels.

redChannel = rgbImage(:, :, 1);

greenChannel = rgbImage(:, :, 2);

blueChannel = rgbImage(:, :, 3);

% Now do your marker controled watershed segmentation

% to get your binary image. Then:

labeledImage = bwlabel(binaryImage);

% Make color measureents.

measurementsRed = regionprops(labeledImage, redChannel, 'MeanIntensity');

measurementsGreen = regionprops(labeledImage, greenChannel, 'MeanIntensity');

measurementsBlue = regionprops(labeledImage, blueChannel, 'MeanIntensity');

**3 Comments**

[Image Analyst](http://www.mathworks.in/matlabcentral/answers/contributors/1343420-image-analyst) on 22 May 2013

[Link](http://www.mathworks.in/matlabcentral/answers/76628#comment_150348)

Your response should have been a comment to my answer, not a new, additional answer to your question.

That is a horribly convoluted, slow, and inefficient way of getting the mean color. I suggest you follow my example. Regionprops() is built for doing this and I suggest you let it do its job. Even if you did want to do it yourself without regionprops, you wouldn't do it like that, but I'm not going to tell you the more efficient way to do it because you should use regionprops.

Then, when it comes time to call label2rgb, you need to make sure coul is a floating point variable in the range of 0 to 1.

[mariem farhat](http://www.mathworks.in/matlabcentral/answers/contributors/3510980-mariem-farhat) on 22 May 2013

[Link](http://www.mathworks.in/matlabcentral/answers/76628#comment_150362)

ok, thank you for your response.

[mariem farhat](http://www.mathworks.in/matlabcentral/answers/contributors/3510980-mariem-farhat) on 22 May 2013

[Link](http://www.mathworks.in/matlabcentral/answers/76628#comment_150366)

but I haven't used regionprops like you have mentioned in your post because actually I want to compute the dominant color of each region and not the mean value. It remains false to use it like I have mentioned?

[](http://www.mathworks.in/matlabcentral/answers/contributors/1343420-image-analyst)

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[Link](http://www.mathworks.in/matlabcentral/answers/76628#answer_86298)

Answer by [mariem farhat](http://www.mathworks.in/matlabcentral/answers/contributors/3510980-mariem-farhat" \o "Reputation: 0) on 22 May 2013

Edited by [mariem farhat](http://www.mathworks.in/matlabcentral/answers/contributors/3510980-mariem-farhat" \o "Reputation: 0) on 22 May 2013

thank you for your response,

this is the code that I have implemented :

if true

f = unique (L);

n = size(f);

for i = 1:n

resultc (:,1:3) = 255;

[r c] = find(L==i);

m= size(r);

for j = 1:m

resultc(j,1) = rgb(r(j), c(j), 1);

resultc(j,2) = rgb(r(j), c(j), 2);

resultc(j,3) = rgb(r(j), c(j), 3);

end

coul(i,:) = mean\_coul(resultc);

end;

end

after this I want to use the result of the mean of intensities to visualize the result such that for each object I print the mean color so I do llike this:

if

Lrgb = label2rgb(L, coul); end

but I got an error:

A message identifier must be followed by another input argument, of type char, representing the message text. \*\_??? Error using ==> label2rgb>parse\_inputs at 147 Invalid entry for MAP.

Error in ==> label2rgb at 50 [label,map,zerocolor,order,fcnflag] = parse\_inputs(varargin{:});

Error in ==> test at 241 Lrgb = label2rgb(L, coul);\_\*