Subject: Re: Distinguishing between point-like and curve-like features
Posted by David Fanning on Tue, 15 Jan 2013 16:54:24 GMT
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Mats Löfdahl writes:

>
> I'm making image masks that are supposed to take out certain small point-like features. These features are usually just a few pixels wide but sometimes as much as about ten or fifteen pixels wide. Because there are other, more large-scale variations in the image, I base the mask on a unsharp masked version of the image, to make the features I'm interested in stand out more. Then I clean the mask with a morph_open operation to get rid of some raggedness of the edges of the "holes" in the mask.
>
> This has worked fine, but I now have some images that have, in addition to the small features that I want to take out, also some high-amplitude curved fringes with similar width that I do _not_ want the mask to take out.
>
> I'm wondering if anyone can suggest a strategy for automatically (and reasonably fast) distinguishing between the point-like and the curve-like features. The masks I'm making either take both out or none, depending on the choice of parameters.
>
> I'm not looking for code here, but maybe some good ideas.
>
> (If you want the background, I'm trying to make bad-pixel masks for some CCD cameras based on flat fields that have significant interference fringes. The small features I want to mask out are clusters of bad pixels, both from the detector itself and due to near-focus dust particles. The purpose of the mask is to identify pixels with no information, where I have to interpolate to get useful values in the science images. Useful in the sense that those pixels do not cause ringing artifacts when I do deconvolution.)

Maybe you could fit the features with an ellipse. It is possible, I
suppose, that curved features will have more elliptical character than
point-like features.

   http://www.idlcoyote.com/ip_tips/fit_ellipse.html

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Distinguishing between point-like and curve-like features
Posted by                          on Wed, 16 Jan 2013 09:49:34 GMT
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Den tisdagen den 15:e januari 2013 kl. 17:54:24 UTC+1 skrev David Fanning:
> Mats Löfdahl writes:
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>>  I'm making image masks that are supposed to take out certain small point-like features. These features are usually just a few pixels wide but sometimes as much as about ten or fifteen pixels wide. Because there are other, more large-scale variations in the image, I base the mask on a unsharp masked version of the image, to make the features I'm interested in stand out more. Then I clean the mask with a morph_open operation to get rid of some raggedness of the edges of
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>    http://www.idlcoyote.com/ip_tips/fit_ellipse.html

Good point! I've been thinking in terms of operations on the whole mask or image but of course I get more control if I do label_region and work on the holes one by one. Then checking for elongatedness shouldn't be too hard, by fitting ellipses or by other means.

Thanks!

/Mats

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## Subject: Re: Distinguishing between point-like and curve-like features
Posted by karo03de on Wed, 16 Jan 2013 09:54:23 GMT
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Am Dienstag, 15. Januar 2013 17:46:08 UTC+1 schrieb Mats Löfdahl:
> Then I clean the mask with a morph_open operation to get rid of some raggedness of the edges of the "holes" in the mask.
>
>
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>

What about applying top_hat operation, segmenting (threshold), (morph-) closing and size selection (histogram of labeled result) of the smaller conglomerates ? If that is not too time-consuming.

Karsten

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## Subject: Re: Distinguishing between point-like and curve-like features
Posted by                    on Wed, 16 Jan 2013 10:11:54 GMT
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Den onsdagen den 16:e januari 2013 kl. 10:54:23 UTC+1 skrev karo03de:
> Am Dienstag, 15. Januar 2013 17:46:08 UTC+1 schrieb Mats Löfdahl:
>
>> Then I clean the mask with a morph_open operation to get rid of some raggedness of the

edges of the "holes" in the mask.
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>
>
> What about applying top_hat operation, segmenting (threshold), (morph-) closing and size selection (histogram of labeled result) of the smaller conglomerates ? If that is not too time-consuming.

Yes, another good point. The curve-like features are usually larger in area so that makes for another criterion, once I have the regions.

Thanks.

/Mats