Subject: Re: Repost of Vertex question...
Posted by Richard French on Fri, 29 Jun 2001 10:55:40 GMT
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> I would love to be able to use IDL to find the vertices in this
> image.
> Essentially this will give me all the corners in the image. Is
> there a
> function in IDL that does such a thing (find intersections or
> verticies)?

Here's an idea that might get you started.

1) Find a way to sort the pixels that contain the 'line' information so that
they are contiguous - i.e., so that they are ordered in such a way that if
you used 'plots,/dev,xvals,yvals' on this set of xvals and yvals, they would
follow the edges of a given polygon as if you were drawing it with a pen on
the screen - there are several ways of doing this, but the details depend on
the nature of your images, so I leave this part to you. If you can't do this
on your image immediately, then you can set up a test image that has this
information in it - that is, simplify your image so that it contains a single
polygon with known pixel coordinates in order.

2) Given this list of pixels, compute the slope of the line containing each
contiguous pair of pixels - something like
theta_vals = atan(yvals-shift(yvals,1), xvals-shift(xvals,1))
(syntax is close but may not be perfect here)

3) Now you can search for vertices by defining them as successive values in
the array theta_vals whose difference (in absolute value) exceeds some threshold
level. You may have some wrap-around modulo two-pi problems when theta goes between
0 and 2*!pi, but this is the general idea.

If you have a very low resolution image, this approach might not work very well,

due to the granularity of the pixel locations, but it is a start. If you are only
after vertices with very sharp angles, though, this might be close to what you want.

Hope this sparks some ideas from others,

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