Subject: Re: Help With Finding Local Maxima of an Image (locmax)
Posted by David Fanning on Wed, 25 Mar 2009 19:41:50 GMT
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einszweilieb@gmail.com writes:

> I'm trying to use R. Sterner's "locmax" function (see below) to find
> local maxima (peaks of intensities) in an image. I'm a bit of a
> newbie to IDL so forgive me if my questions are silly :)
>
> As far as I can tell, all I need to do is read in the image (img) and
> use the command "locmax, img". Is that correct?
>
> When I do this I get the error message which says something like
> "return statements in functions must have 1 value" Line 79 (i.e. the
> second to last line below with the "return" statement).
>
> What's going wrong here? Why is the function trying to return
> multiple values? Isn't that what it's supposed to do - return all of
> the places where there's a local max?
>
> Can anyone help me with this? Does anyone know of any other
> procedures/functions which do similar things?

Here is the problem:

> function locmax, img, mask=m, where=w, ix=ix, iy=iy, sort=srt, $
> values=v, value_image=vimg, noedge=noed, help=hlp

Change the word "function" to "pro", compile it, and try it again.
I think this is a typo in the code, because clearly he meant for you
to call this as a procedure, not as a function.

Cheers,

David
--
David Fanning, Ph.D.
Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Help With Finding Local Maxima of an Image (locmax)
Posted by Jeremy Bailin on Thu, 26 Mar 2009 13:20:48 GMT
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On Mar 25, 3:35 pm, einszweil...@gmail.com wrote:
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>  the places where there's a local max?
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>  Can anyone help me with this?  Does anyone know of any other
>  procedures/functions which do similar things?
>
>  Thanks.
>
>   ;------------------------------------------------------------ --
>  ;+
>  ; NAME:
>  ;       LOCMAX
>  ; PURPOSE:
>  ;       Find local maxima in an image.
>  ; CATEGORY:
>  ; CALLING SEQUENCE:
>  ;       locmax, img
>  ; INPUTS:
>  ;       img = image to process.              in
>  ; KEYWORD PARAMETERS:
>  ;       Keywords:
>  ;         MASK=m returns a mask image with 1 at all
>  ;           local maxima and 0 elsewhere.
>  ;         WHERE=w returns 1-d indices of all local maxima.
>  ;           -1 if no local maxima.
>  ;         VALUES=v returns values of img at all local maxima.
>  ;         VALUE_IMAGE=vimg use vimg to determine values.
>  ;           Instead of img.
>  ;         IX=ix returns x index of all local maxima.
>  ;         IY=iy returns y index of all local maxima.
>  ;         /SORT sorts local maxima by descending image values.
>  ;         /NOEDGE ingores any maxima at image edges.
>  ; OUTPUTS:
>  ; COMMON BLOCKS:
>  ; NOTES:
>  ;       Notes: All output is through keywords.
>  ;         Ignores plateaus.  May not work for
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>  ;        all edge points.
>  ; MODIFICATION HISTORY:
>  ;       R. Sterner, 17 Aug, 1990
>  ;       R. Sterner, 27 Aug, 1990 --- added value_image.
>  ;
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>  ; routine is provided as is without any express or implied warranties
>  ; whatsoever.  Other limitations apply as described in the file
>  disclaimer.txt.
>  ;-
>   ;------------------------------------------------------------ --
>
>         function locmax, img, mask=m, where=w, ix=ix, iy=iy, sort=srt, $
>           values=v, value_image=vimg, noedge=noed, help=hlp
>
>         fuzz = 1.e-8            ; Ignore values below this.
>
>         ;-----  Shift four ways  -----
>         dx1 = shift(img,1,0)
>         dx2 = shift(img,-1,0)
>         dy1 = shift(img,0,1)
>         dy2 = shift(img,0,-1)
>         ;------  compare each pixel to 4 surrounding values  -------
>         m = (img gt dx1) and (img gt dx2) and (img gt dy1) and (img gt dy2)
>         if keyword_set(noed) then imgfrm, m, 0
>         ;------  number of local maxima  --------
>         w = where(m eq 1, count)        ; Find local maxima.
>         fzz = img(w)                    ; Pull out values.
>         wfzz = where(fzz lt fuzz, c)    ; Look for values below fuzz.
>         if c gt 0 then begin            ; Found any?
>           m(w(wfzz)) = 0                ;   Yes, zap them.
>           w = where(m eq 1, count)      ;   Now try again for local maxima.
>         endif
>         ;------  if any continue  ------
>         if count gt 0 then begin
>           if n_elements(vimg) eq 0 then begin   ; Pick off values at maxima.
>             v = img(w)
>           endif else begin
>             v = vimg(w)
>           endelse
>           if keyword_set(srt) then begin        ; Sort?
>             is= reverse(sort(v))                ; yes.
>             v = v(is)
```

```
>             w = w(is)
>           endif
>           one2two, w, img, ix, iy              ; Convert to 2-d indices.
>         endif
>
>         return
>
>         end
```

You'll need to use some of those keywords to get the results out too...

-Jeremy.
