Subject: Re: Grouping adjacent detected pixels?
Posted by Thomas A McGlynn on Mon, 28 Aug 1995 07:00:00 GMT
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grunes@news.nrl.navy.mil (Mitchell R Grunes) wrote:
> Subject: Grouping adjacent detected pixels?
>
> I have an image of "detected" points--
> True for pixels meeting some detection criteria (such as brightness).
> False otherwise.
>
> I wish, using WAVE or IDL, to:
>
> 1. Group together adjacent detected pixels.
> If I want to get fancy, I might try to group together detected
> pixels which are within a specific distance of touching.
>
> 2. Get a something like a structure back, each element of which
> describes one such group. Each element would be an array
> of the coordinates of the pixels in the adjacent group.
>
> Can anyone think of an EFFICIENT way to do this that does not involve
> a massively slow loop which loops once for each detected pixel?
>
> (There are many, many detected points, and IDL/WAVE are rather slow
> at loops.)
>
> Thanks in advance for your response.

Suppose you have a one dimensional array x of dimension n
where x ne 0 for detected pixels.

Then you can find the starting offset of each group of pixels with

w= where(x(0:n-2) eq 0 and x(1:n-1) ne 0))

You'll need to handle the first pixel specially and add 1 or 2 to the
offsets

e.g.,

```
IDL> a=[0,0,0,1,1,1,0,1,0,0,0,1,1,0,0,1,0,1,0]
IDL> help,a
A               INT       = Array(19)
IDL> w=where(a(0:17) eq 0 and a(1:18) ne 0)
IDL> print,w
       2          6         10         14         16
```

To handle multidimensional stuff you'll need to do something more sophisticated, but you can do similar things to get rid of at least the innermost loop.

Hope this helps,
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