Subject: Re: how many array elements with a certain value in a row
Posted by David Fanning on Thu, 01 Apr 2010 13:02:35 GMT
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Jeremy Bailin writes:

> Does anyone have a nice simple efficient solution to this problem (I
> have a simple inefficient solution and a vague sketch in my mind of a
> convoluted but probably efficient solution):
>
> I have an image in which many pixels are saturated (=65535, they're
> short unsigned). I want to treat each set of consecutive saturated
> pixels in a row as a single unit and know how many saturated pixels in
> a row there are. So I would like to have a list that contains (a) the
> rightmost pixel of each set of consecutive saturated pixels, and (b)
> how many saturated pixels there were in the set.

I'm guessing you could probably work something out with
LABEL_REGION. As for efficiency...

Cheers,

David

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

Subject: Re: how many array elements with a certain value in a row
Posted by Gray on Thu, 01 Apr 2010 13:03:05 GMT
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On Apr 1, 8:49 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> Does anyone have a nice simple efficient solution to this problem (I
> have a simple inefficient solution and a vague sketch in my mind of a
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> rightmost pixel of each set of consecutive saturated pixels, and (b)
> how many saturated pixels there were in the set.

>
> Any suggestions?
>
> -Jeremy.

Well, the weird idea I just had was convert each row to a string, then
run STREGEX to find the saturated values.

Subject: Re: how many array elements with a certain value in a row
Posted by ben.bighair on Thu, 01 Apr 2010 13:17:21 GMT
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On Apr 1, 9:02 am, David Fanning <n...@dfanning.com> wrote:
> Jeremy Bailin writes:
>> Does anyone have a nice simple efficient solution to this problem (I
>> have a simple inefficient solution and a vague sketch in my mind of a
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> I'm guessing you could probably work something out with
> LABEL_REGION. As for efficiency...

Hi,

That sounds right. I recall HISTOGRAM scans left to right along rows.
So a histogram of the labeled image coupled with the reverse indices
and a row look-up function to convert from index to row should provide
enough info.

Is this like a run-length-encoding you're looking for?

Cheers,Ben

Subject: Re: how many array elements with a certain value in a row
Posted by Jeremy Bailin on Thu, 01 Apr 2010 13:40:00 GMT
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> That sounds right. I recall HISTOGRAM scans left to right along rows.
> So a histogram of the labeled image coupled with the reverse indices

> and a row look-up function to convert from index to row should provide
> enough info.

Hmmm, yeah that would probably work. I'm not sure it's any less convoluted than the TOTAL(/CUMULATIVE)-based solution I was thinking of.

> Is this like a run-length-encoding you're looking for?

I suppose that someone implementing run-length-encoding would need similar information, but all I care about are the locations where one particular value occurs so I can look at the properties of the image relative to those locations.

-Jeremy.

Subject: Re: how many array elements with a certain value in a row
Posted by Chris W on Thu, 01 Apr 2010 13:48:21 GMT
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On Apr 1, 7:49 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> Does anyone have a nice simple efficient solution to this problem (I
> have a simple inefficient solution and a vague sketch in my mind of a
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> how many saturated pixels there were in the set.
>
> Any suggestions?
>
> -Jeremy.

create an array the same size as the image, with values equal to the x index ([0,1,2,3,4,5,.....]:

```
x = indgen(512)
rx = rebin(x,512,512)

;;create a mask
mask = image eq 65535

;; index values of the mask
rxmask = rx*mask
```

rightvalues = max(rxmask, dimension=1)

number_in_rows = total(mask, 1)

Subject: Re: how many array elements with a certain value in a row
Posted by Jeremy Bailin on Thu, 01 Apr 2010 13:56:00 GMT
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On Apr 1, 9:48 am, Chris W <cwood1...@gmail.com> wrote:
> On Apr 1, 7:49 am, Jeremy Bailin <astroco...@gmail.com> wrote:
>
>> Does anyone have a nice simple efficient solution to this problem (I
>> have a simple inefficient solution and a vague sketch in my mind of a
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> rxmask = rx*mask
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>
> number_in_rows = total(mask, 1)

No, that won't work - it will only pick up one set per row. There
could be none or many sets in a ny given row.

-Jeremy.

Subject: Re: how many array elements with a certain value in a row
Posted by Chris W on Thu, 01 Apr 2010 14:14:23 GMT
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On Apr 1, 8:56 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> On Apr 1, 9:48 am, Chris W <cwood1...@gmail.com> wrote:
>
>
>
>> On Apr 1, 7:49 am, Jeremy Bailin <astroco...@gmail.com> wrote:
>
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> No, that won't work - it will only pick up one set per row. There
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> -Jeremy.

How about using reform to convert the 2d image into a vector, use
label region to number each set, then histogram with reverse_indices

to find the coordinates of each set (the number in each set will be
the histogram values).

Chris

Subject: Re: how many array elements with a certain value in a row
Posted by Jeremy Bailin on Thu, 01 Apr 2010 15:11:00 GMT
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On Apr 1, 10:14 am, Chris W <cwood1...@gmail.com> wrote:
> On Apr 1, 8:56 am, Jeremy Bailin <astroco...@gmail.com> wrote:
>
>
>
>
>
>> On Apr 1, 9:48 am, Chris W <cwood1...@gmail.com> wrote:
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>>> On Apr 1, 7:49 am, Jeremy Bailin <astroco...@gmail.com> wrote:
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> label region to number each set, then histogram with reverse_indices
> to find the coordinates of each set (the number in each set will be
> the histogram values).
>
> Chris

Yeah, that's good - it's basically what Ben was suggesting, but doing that reform at the beginning takes away a lot of the extra bookkeeping that was making me avoid it. Just need to throw an extra column of 0s at the edge of the image before the reform to make sure that a run at the end of one row doesn't get attached to any at the beginning of the next row.

Thanks!

-Jeremy.

Subject: Re: how many array elements with a certain value in a row
Posted by jeanh on Thu, 01 Apr 2010 15:22:44 GMT
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On 01/04/2010 8:49 AM, Jeremy Bailin wrote:
> Does anyone have a nice simple efficient solution to this problem (I
> have a simple inefficient solution and a vague sketch in my mind of a
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> rightmost pixel of each set of consecutive saturated pixels, and (b)
> how many saturated pixels there were in the set.
>
> Any suggestions?
>
> -Jeremy.

Hi,

what about using shift? ... untested and though in a baby-scream environment, so sorry if I miss the obvious

a) select pixels with the targeted value (where)
b) do img-shift(img)
c) look at the indexes found in a) and that are positive in b) so that you only get the ending position.

Jean
