
Subject: Re: clever way to subregion an image?
Posted by [pgrigis](#) on Fri, 09 Apr 2010 16:38:14 GMT
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On Apr 9, 12:05 pm, "R.G. Stockwell" <noem...@please.com> wrote:

> I need to cut an image into 4 equal-size parts, which
> obviously is very easy to do in a few lines.
> image1 = im[0:nx/2-1, 0:ny/2-1]
> image2 = im[0:nx/2-1, ny/2:ny]
> image3 = im[nx/2:nx-1, 0:ny/2-1]
> image4 = im[nx/2:nx-1, ny/2:ny]
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> it required 4 steps (several reforms, a couple transposes)
> to do it properly.
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> I'd be interested (just for fun) in a vectorized general way to do this
> if any of you 'dimension jugglers' have any clever ideas,
> for how to take an image and cut it into 4, or 16, or 64,
> or 256 equal pieces (that would probably be about the maximum)

Well, if it is just for fun, why not use a recursive approach?
I always like the simplicity of these :) (though they are not
always the most efficient way, and sometimes they are the worst
way to do it).

```
res=segim(dist(512,512),level=4)
IDL> help,res
RES          FLOAT    = Array[8192, 32]
```

The output is just an array with the images side by side, i.e.
[im1,im2,...,im256].

There are $(2^{\text{level}})^2$ subarrays. That is,

```
lev =1 -> 4
lev =2 -> 16
lev =3 -> 64
lev =4 -> 256
etc.
```

Ciao,
Paolo

```
FUNCTION segim,im,level=level
```

```
IF n_elements(level) EQ 0 THEN level=4
```

```
n=size(im,/dimension)
nx=n[0]
ny=n[1]
```

```
IF level EQ 0 THEN return,im
```

```
return,[segim(im[0:nx/2-1, 0:ny/2-1],level=level-1),segim(im[0:nx/2-1,
ny/2:*],level=level-1), $
      segim(im[nx/2:* , 0:ny/2-1],level=level-1),segim(im[nx/2:* ,
ny/2:*],level=level-1)]
END
```

```
>
> cheers,
> bob
```

Subject: Re: clever way to subregion an image?
Posted by [R.G.Stockwell](#) on Fri, 09 Apr 2010 18:50:16 GMT
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```
> "Paolo" <pgrigis@gmail.com> wrote in message
> news:929b2d07-c3ce-448e-b36d-0227a031b22e@20g2000vbr.googlegroups.com...
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> END

```

very nice. I've always been a big fan of recursion. One thing i didn't like about the recursion approach was that the ordering is a bit awkward, especially for higher levels. I had originally wanted to start at the top right, and go left to right, with the ordering.

But as i was looking at this, it occurred to me that all i need to

do is create a latitude array, and a longitude array and segment those as well,
then I can just loop through and process everything in a straightforward manner.

I'd just point out that one could do a little juggle to break the arrays out with:

```
IDL> result2 =  
  transpose(reform(transpose(result),nx/(2^level),ny/(2^level) ,(2^(2*level))),[1,0,2])  
then the subarrays are  
IDL>print,result2[* ,*,0],result2[* ,*,1], etc
```

cheers,
bob

PS this if for google earth network linking of images, at the varying resolutions.
You know how you zoom in from orbit, all the way down to your house and street.

Subject: Re: clever way to subregion an image?
Posted by [Gray](#) on Sat, 10 Apr 2010 14:55:27 GMT
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> You know how you zoom in from orbit, all the way down to your house and
> street.

You can get your subdivision indices for any square subdivision
(2x2,3x3,4x4, etc.) pretty easily with two lines of code:
IDL> xy = fix((indgen(n_sub+1)/n_sub)##size(image,/dimensions))
IDL> xy[* ,n_sub] -= 1

Then subdivision (2,3) for example is
image[xy[0,2]:xy[0,3],xy[1,3]:xy[1,4]]
