
Subject: Re: write more efficient for loop

Posted by [Michael Galloy](#) on Mon, 10 Aug 2015 01:26:48 GMT

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On 8/7/15 1:39 PM, g.nacarts@gmail.com wrote:

> I tried to understand what you suggested but it doesn't make a lot of sense to me.

>

> I found in the link below that by exchanging the two FOR loops the computation time can be reduced

> <http://www.exelisvis.com/Support/HelpArticlesDetail/TabId/219/ArtMID/900/ArticleID/1799/1799.aspx>

>

> I tried it but doesn't reduce at all. Maybe I did a mistake or I didn't understand well?

>

>

> N = 215L

>

> Image_2 = make_array(N,N,/double)

>

> for j=0L, N-1 do begin

> for i=0L, N-1 do begin

> x = round(i + A[i, j])

> y = round(j + B[i, j])

> if (x ge 0) && (y ge 0) then begin

> Image_2[i,j] = Image_1[x, y]

> endif

> endfor

> endfor

>

I had a couple typos in the x =... and y =... lines, check out the process for n=5:

IDL> n = 5

IDL> a = randomu(seed, n, n)

IDL> b = randomu(seed, n, n)

IDL> print, a

0.671444	0.339387	0.0291560	0.626489	0.327068
0.880495	0.773669	0.845125	0.133505	0.611774
0.133046	0.206592	0.892692	0.924602	0.300541
0.970698	0.572081	0.609453	0.881446	0.627840
0.574902	0.0269283	0.326179	0.282648	0.197054

IDL> print, b

0.179979	0.666919	0.447893	0.598895	0.747911
0.665888	0.923736	0.571645	0.833802	0.205634
0.539740	0.445450	0.643078	0.0266434	0.399671
0.978612	0.377670	0.645917	0.332302	0.734567
0.794310	0.146270	0.731570	0.971320	0.359303

```

IDL> x = round(rebin(reform(findgen(n), n, 1), n, n) + a)
IDL> y = round(rebin(reform(findgen(n), 1, n), n, n) + b)
IDL> print, x
    1      1      2      4      4
    1      2      3      3      5
    0      1      3      4      4
    1      2      3      4      5
    1      1      2      3      4
IDL> print, y
    0      1      0      1      1
    2      2      2      2      1
    3      2      3      2      2
    4      3      4      3      4
    5      4      5      5      4
IDL> ind = where(x ge 0 and y ge 0, count)
IDL> print, count
    25
IDL> image_1 = randomu(seed, n, n)
IDL> image_2 = fltarr(n, n)
IDL> image_2[ind] = image_1[x[ind], y[ind]]
IDL> print, image_1
    0.0991742  0.568827  0.928698  0.431867  0.582845
    0.570439  0.752998  0.347453  0.864314  0.397977
    0.0470480  0.847442  0.691785  0.343657  0.0733360
    0.418571  0.152661  0.580832  0.130468  0.283944
    0.00865856 0.547303  0.157060  0.316100  0.770079
IDL> print, image_2
    0.568827  0.752998  0.928698  0.397977  0.397977
    0.847442  0.691785  0.343657  0.343657  0.397977
    0.418571  0.847442  0.130468  0.0733360  0.0733360
    0.547303  0.580832  0.316100  0.283944  0.770079
    0.547303  0.547303  0.157060  0.316100  0.770079
IDL> print, ind
    0      1      2      3      4
5      6      7
    8      9     10     11     12
13     14     15
    16     17     18     19     20
21     22     23
    24

```

Mike

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Modern IDL: A Guide to IDL Programming (<http://modernidl.idldev.com>)