
Subject: Re: Help requested in eradicating FOR loops
Posted by [Vince Hradil](#) on Fri, 14 Dec 2007 16:24:29 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Dec 14, 10:06 am, dplat...@gmail.com wrote:

```
> Dear IDL users,
>
> I would really appreciate some help in removing a nested FOR loop.
>
> FOR x=0, image_width-1 DO BEGIN
>     FOR y=0, image_height-1 DO BEGIN
>         ; Write the current pixel value
>         results[(x*mtf_region_height)+y, 1] = image[x,y]
>         ; Calculate the distance of the current pixel from the
> line defined
> by the
>         ; two points (x1, y1) and (x2, y2).
>         results[(x*image_height)+y, 0] = ( (y1-y2)*x + (x2-
> x1)*y + (x1*y2 -
> x2*y1) ) / SQRT( (x2-x1)^2 + (y2-y1)^2 )
>     ENDFOR
> ENDFOR
>
> 'image' is a 2d image array
> I want to work out the distance of each pixel from a line that is
> defined by the two points (x1, y1), (x2, y2) and store this distance,
> together with the pixel value in a 'results' array. The 'results'
> array has the dimensions [(image_height*image_width), 2].
>
> The above bit of code works but is a bit slow.
>
> Any advice would be much appreciated.
>
> Thanks,
>
> David
> Northampton, UK
```

Off the top of my head:

```
1-reform the points to match the size of the image: x1 =
reform(x1,image_height,image_width)
2-make in "index" array: idx = findgen(image_height,image_width)
3-make x-index and y-index arrays: x = idx mod image_height & y = idx/
image_height (or maybe those should be image_width?)
4-do the calculation: distance = ( (y1-y2)*x + (x2-x1)*y + (x1*y2-
x2*y1) ) / SQRT( (x2-x1)^2 + (y2-y1)^2 )
5-put together the results matrix: results =
[[reform(image,image_height*image_width)],[distance]] (I'd have to
```

check the brackets, I always do)
