
Subject: Re: Image warping in IDL
Posted by [Wox](#) on Fri, 10 Nov 2006 09:05:25 GMT
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On Thu, 09 Nov 2006 12:50:15 -0700, JD Smith <jdsmith@as.arizona.edu>
wrote:

> I'm afraid if you want to get any further with this, you are going to
> have to illustrate the issue with a small amount of actual IDL code.

```
;%%%%%%%%%%%  
; img points to the input image  
imgs=size(*img)  
seval=indgen(imgs[1])  
teval=indgen(imgs[2])  
xmap=seval#replicate(1b,imgs[2])  
ymap=replicate(1b,imgs[1])#teval  
  
; X-distortion  
xmap+=bsplineint2Dcp(xuvec,xvvec,xp,xq,xn,xm,xh,xk,seval,teval,xCP)  
; -> these parameters come from an external source  
; Y-distortion  
ymap+=bsplineint2Dcp(yuvec,yvvec,yp,yq,yn,ym,yh,yk,seval,teval,yCP)  
; -> these parameters come from an external source  
  
; At this point we have the corresponding output pixel (non-integer)  
for each input pixel  
  
; Forward mapping: resample_array performs Fant's resampling  
algorithm:  
interimg=ptr_new(*img)  
  
; loop over rows  
for i=0,imgs[2]-1 do $  
  resample_array, xmap[*],img, interimg, imgs[1], 1,  
  i*imgs[1]  
; loop over columns  
for i=0,imgs[1]-1 do $  
  resample_array, ymap[i,*], interimg, img, imgs[2], imgs[1], i  
  
ptr_free,interimg  
  
; img now points to the output image  
;%%%%%%%%%%%
```

The two loops are the time consumers.

So to repeat the question:

1. Can I do something faster than the looping to resample the image?

OR

2. Is there a "magic operation" for converting CP's and uvec/vvec so that xmap and ymap describe distortion of output pixels?

I'd like to refer to this URL for the spline surface evaluated in bsplineint2Dcp:

<http://www.cs.mtu.edu/~shene/COURSES/cs3621/NOTES/surface/bspline-construct.html>

So I've got the control points(CP), the knot vectors(uvec and vvec) and I have the degrees(p,q).
