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,tev al,xCP)
; -> these parameters come from an external source
; Y-distortion
 ymap+=bsplineint2Dcp(yuvec,yvvec,yp,yq,yn,ym,yh,yk,seval,tev al,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[*,i], 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 then 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/bs pline-construct.html
So I've got the control points(CP), the knot vectors(uvec and vvec)
and I have the degrees(p,q).
