Subject: Re: Is there somebody familiar with nurbs or b-Spline?
Posted by Vince Hradil on Mon, 27 Aug 2007 15:05:59 GMT
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On Aug 27, 4:19 am, airy.ji...@gmail.com wrote:
> In fact,I'm still trying to read the DXF file into IDL.The Spline in
> the DXF is construct with nurbs line.The IDL have a
> method :Spline_P,but it can't reconstruct completely the same
> shape.Who can tell me how to use the nurbs create the Spline.I know
> it's complex and hard to describe,so ,if there are some source code
> can be showed it would be perfect.
> Thanks!

This function worked for me:

First I get all the controlpts for the spline. Then, in my function
ncp=# of control points, the controlpts are (in my case) 2 X ncp.
nsegs is the number of line segments per controlpt that I want to make
my spline into (4L is usually enough for me). The returned value is
the 2 X (nsegs*ncp) line segments needed to dray a polyline.

Hope this helps.

```
function eval_spline, ncp, controlpts, nsegs

  tarray = findgen(nsegs)/(nsegs)
  np = (ncp-1)/3

  sval = fltarr(2,nsegs*np+1)
  for i=0l, np-1 do begin
     p0 = controlpts[*,3*i]
     p1 = controlpts[*,3*i+1]
     p2 = controlpts[*,3*i+2]
     p3 = controlpts[*,3*i+3]

     sval[*,nsegs*i] = p0
     for j=1l, nsegs-1 do begin
        t = tarray[j]
        vert = p0*(1-t)*(1-t)*(1-t) + p1*3.0*t*(1-t)*(1-t) +
p2*3.0*t*t*(1-t) + p3*t*t*t
        sval[*,nsegs*i+j] = vert
     endfor
  endfor
  sval[*,nsegs*np] = controlpts[*,ncp-1]

  return, sval
end
```

Subject: Re: Is there somebody familiar with nurbs or b-Spline?
Posted by airy.jiang on Mon, 27 Aug 2007 15:46:02 GMT
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On 8 27 , 11 05 , hradilv <hrad...@yahoo.com> wrote:
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>
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>
> function eval_spline, ncp, controlpts, nsegs
>
> tarray = findgen(nsegs)/(nsegs)
> np = (ncp-1)/3
>
> sval = fltarr(2,nsegs*np+1)
> for i=0l, np-1 do begin
> p0 = controlpts[*,3*i]
> p1 = controlpts[*,3*i+1]
> p2 = controlpts[*,3*i+2]
> p3 = controlpts[*,3*i+3]
>
> sval[*,nsegs*i] = p0
> for j=1l, nsegs-1 do begin
> t = tarray[j]
> vert = p0*(1-t)*(1-t)*(1-t) + p1*3.0*t*(1-t)*(1-t) +
> p2*3.0*t*t*(1-t) + p3*t*t*t
> sval[*,nsegs*i+j] = vert
> endfor
> endfor
> sval[*,nsegs*np] = controlpts[*,ncp-1]
>
> return, sval
> end

Hi,hradilv!I knew you'll comein.^_^In fact I'm waiting for you!
Somedays befor,I've used your code "plot_dxf" made some test.But I'm sorry about that the result of the spline is looked not very good.I'll made a screenshot of the result next day(it's very late at here and the I'm not at the office but my home).Hope I can made more discussion with you.
Thank you!And hope more people who is familiar with these things can join here.

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Subject: Re: Is there somebody familiar with nurbs or b-Spline?
Posted by airy.jiang on Tue, 28 Aug 2007 04:41:58 GMT
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I use the plot_dxf.pro and IDL method Spline_P made some test,but the result is still not very good.
This is the link where I have uploaded the test results.There are 3 pictures.First is the result made by your code which used the function eval_spline.Second is the result made by your code but with the modificaion of the eval_spline.I just did a little change.
Like this: Spline_P, controlpts[0,*],controlpts[1,*],x,y
sval = [Transpose(x),Transpose(y)]
The third picture is a screenshot of the file opened by the autocad2004 .
You can see the shapes of them are nearly the same bu not enough.Can we make it a better effect?
Thank you !

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