

---

Subject: Re: Need Some Good Ideas

Posted by [Martin Downing](#) on Thu, 21 Feb 2002 22:35:30 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Hi David,

referring to your gateway blobs:

if that's what you have then they are easy to segment, you then identify each individual blob using region labeling

now for each blob:

1. identify the boundary (this should be as a [x,y] array of every boundary pixel (no long sides)- as either an internal or external boundary
2. transform the array to [s,theta], where s[i] is the cumulative distance along the boundary to P[i] and theta[i] is the angle of the link of P[i-1] from P[i] relative to (say) the X axis
3. [s,theta] will be periodic, (i.e. you could carry on going round and round), so you can now run a FFT or calculate the first fourier descriptors of it - see reference

good luck - I spend rather too much time playing with this kind of stuff!

Martin

#### Reference List

1. Lin, Chellappa R. Classification Of Partial 2-D Shapes Using Fourier Descriptors. IEEE Transactions On Pattern Analysis And Machine Intelligence 1987; 9:686-690

--

-----  
Martin Downing,  
Clinical Research Physicist,  
Grampian Orthopaedic RSA Research Centre,  
Woodend Hospital, Aberdeen, AB15 6LS.  
[m.downing@abdn.ac.uk](mailto:m.downing@abdn.ac.uk)

"David Fanning" <[david@dfanning.com](mailto:david@dfanning.com)> wrote in message  
news:MPG.16de0d88b1cdeb82989813@news.frii.com...

- > Folks,
- >
- > Do you have your thinking caps on? I'm looking for
- > a few good ideas.
- >
- > I have a bunch of blobs. (Think spots on the
- > Gateway cow.) I would like to analyze the curvature
- > and bends in the perimeter of the blobs. I have
- > the indices of the points that make up the blob, and

> I have obtained the "perimeter" points by contouring  
> the blob. Unfortunately, these perimeter points are  
> not evenly distributed. (Think of a blob that has a  
> long, straight side. The contour command will put a  
> point at either end of the straight bit, so the points  
> on that side of the blob are sparse, while the points  
> along a tight bend on the other side of the blob  
> are dense.)  
>  
> I say "unfortunately" because we have a method that  
> uses the derivative of the perimeter at each point  
> and the FFT transform of the derivative distribution,  
> but it seems to be giving funny results because of this  
> point distribution problem.  
>  
> Has anyone heard of this kind of curvature analysis  
> before? Any pointers to literature? I've heard that  
> IDL can be used to solve these kinds of problems. :-)  
>  
> Thanks,  
>  
> David  
> --  
> David W. Fanning, Ph.D.  
> Fanning Software Consulting  
> Phone: 970-221-0438, E-mail: david@dfanning.com  
> Coyote's Guide to IDL Programming: <http://www.dfanning.com/>  
> Toll-Free IDL Book Orders: 1-888-461-0155

---