Subject: Re: Average outline of several contours
Posted by Karsten Rodenacker on Wed, 26 Nov 2003 09:55:19 GMT
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David Fanning schrieb:
> Beat Schmutz writes:
>
>
>> I have combined 8 contours of bone cross-sections into one image
>> (individual ROIs in a IDLgrROIGroup). Now I like to determine the
>> path/outline which represents the average of these 8 contours. Is
>> anyone aware of a program/code/method that enables me to achieve this?
>> Any help would be greatly appreciated.
>
>
> The Matlab folks probably have a better idea, but
> how about a purely graphical approach?
>
> Assign the pixels inside each ROI a value. Say 10.
> Draw each filled ROI on a clean image, as you draw
> the ROIs add their pixel values. Do this with all
> eight ROIs. When you are finished, divide the pixel
> values by the number of ROIs. Pixels that were in
> all eight ROIs now have a value of 10, pixels that
> appear in some ROIs, but not others, have lesser
> values. Now just contour the "blob" you have there
> with the average value of all the pixels in the
> image.
>
> Wouldn't that be the "average" ROI path?
>
> I don't know what I am doing answering IDL questions.
> It is VERY late. (I'm getting to be as bad as Reimar,
> working night and day.) Your mileage may vary with
> this answer. :-)
>
> Cheers,
>
> David

Adding to David's recommendation: you could use a variable weight, e.g. the Z-coordinate of your bone sections, instead of the proposed "10" and devide the sum image by the sum of Z-coordinates instead of the number of images. This would generate probably a more reasonable mask. Still there is the problem of large displacements.

A completely different approach could be to generate the masks from ROI, taking the maximum (or's) and the minimum (and's), taking the

'difference' (xor) of both, resulting most probably or hopefully in a ring and generate a skeleton from that ring. This could be called a morphological approach.

Regards
Karsten
