Subject: Re: Image processing question
Posted by pit on Tue, 28 Oct 1997 08:00:00 GMT
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In article <01bce2f7$500510c0$181b8581@51peg>,
"Eric Williams" <eric@astro.wesleyan.edu> writes:
> Hello,
>
> This might not be specific to IDL, but I am using IDL for this work so
> I thought I would ask the experts. I am looking for a reference or
> source to read up on processes for combining a series of images. The
> images will need to be shifted to match up objects (specifically
> stars) and use the best algorithmn to do the adding. This is a common
> procedure in astronomy, but I haven't found any "instructional"
> material that explains the possible options to perform this operation.

> Of course if anyone has written code that already does this I would
> be interested in checking it out.

Hi Eric,

I'm using this kind of adding images in my Speckle Code. It can be used either automatic (when you know where approximately to insert the new part) or manually.

First, you define an empty image I of approx. the size of the result, and a weighting array(float) W of the same size.

To add a part, you multiply the partial image with a cosine-like weighting function and add it at the apropriate position to the resulting image, and add the weighting function to the weight array.

The final image will be F/W

To find the position of a new part, you have to find the indices of the overlap of the up-to-then added image and the new part. Then you use the standard deviation of the difference in that overlap as a measure of the position: You have to find the minimum value for the stdev.
So you start at some reasonable position, and compute the stdev for that point and the 8 surrounding ones. Go to the position with minimal stdev and recycle until you are at the minimum. This gives you the position where to insert the new part.

If you (or someone else) is interested in the code I can extract the functions from my code and put them on a FTP-Server.

Peter

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Come and see the stars! http://www.kis.uni-freiburg.de/~ps/SFB
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