Subject: Re: 3D Display of "Registered" Images
Posted by davidf on Wed, 04 Dec 1996 08:00:00 GMT
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Timothy Michael Ellmore <tellmore@gwis2.circ.gwu.edu> writes:

> I'm intersted in writing a program to display in 3D two images which are in
> near perfect (close enough) "register."
>
> More specifically, I have two images (dimensions 256,256,198). One is an
> 8-bit image of structure (a brain) and the other is a 32-bit image where
> each element represents blood flow response in the form of a z-score
> statistic. I've thresholded my 32-bit image to highlight only those areas of
> significance and would like to display the thresholded image on the
> "structural" 8-bit image so that I may view it in 3D.
>
> Can anyone recommend any useful IDL functions and programming tips so that I
> may successfully complete this project?

Not my particular area of expertise this 3D rendering, but...if I were to
have a go,
here is where I would start anyway. You need a way of rendering the brain in
3D space. I'd start with SHADE_VOLUME to get some kind of isosurface that
you want to display. This would be the particular level(s) where the blood
flow was pertinent, or at least where you want to visualize it. And I would
pass the blood flow array into SHADE_VOLUME (along with the brain volume)
with the SHADES keyword.

The reason for this is that you want to display the "shape" of the brain, but
you want it shaded with the blood flow values. You need the return value of the
SHADES keyword to have the proper "shading" parameters in the next step
of the process, with involves rendering the 3D surface with the function
POLYSHADE.

Take everything you get back from SHADE_VOLUME and pass it along
to POLYSHADE to render it. Be sure you use the SHADES keyword to
POLYSHADE to pass in the blood flow shading values. What you should
see is the isosurface of the brain (the shape), colored or shaded with
the blood flow values.

Why don't you give us a report and tell us if this works! ;-)

David

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