Subject: Re: COLOR_QUAN question
Posted by davidf on Wed, 18 Aug 1999 07:00:00 GMT
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Daniel Peduzzi (peduzzi@mediaone.net) writes:

> My question concerns the R, G, and B arrays returned by the COLOR_QUAN
> function. I've noticed that I don't receive the same RGB values if I call the function
> multiple times with the same input arguments. This isn't very noticeable upon visual
> inspection of the resulting images, unless the differences are exaggerated by color map
> operations such as histogram equalization.

Oh, oh. Hold on here. I think we may be fooling ourselves a bit. First of all, in the examples that matter (Step 1 and Step 3) the first 31 colors are the gray scale colors of the images. They appear to be identical in both color tables. (I used my CINDEX program to view the color tables after I loaded them.) Moreover, the resulting 2D images only have values between 0 and 31, and *they* are identical.

http://www.dfanning.com/programs/cindex.pro

Notice that your differences start *above* the values that are really used in the images.

Although I can't really explain the differences that *don't* matter, I do note that the algorithm is a statistical method. To me this suggests some randomization may be involved to get some kind of "seed" or something. (I'm making this up, but I bet I'm right.)

Using a histogram equalization will certainly lead to strange results, because the color tables returned from COLOR_QUAN are *never* continuous in color. A pixel value is assigned a particular color, but that color may be COMPLETELY different from the pixel with an adjacent value. There is no requirement, I don't think, that the same value be assigned the same color in two different instances. Only that the pixel values and the colors fairly represent the colors in the 3D image.

> If I include the /MAP_ALL keyword with each call to COLOR_QUAN, the discrepancies
> disappear. However, the documentation indicates that /MAP_ALL should be used
> only if /GET_TRANSLATION is also present (which I don't think I need.)
>
> Should I expect to see the differences above, and is it safe to use the /MAP_ALL
> keyword to eliminate those differences?

I really think the differences are a non-issue. Forget about
the MAP_ALL keyword and cheerfully use COLOR_QUAN. :-)

Cheers,

David

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