Subject: Re: Working with color, cursor, and png to extract information
Posted by David Fanning on Mon, 04 Feb 2008 20:31:19 GMT
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Brian Larsen writes:

> What I want to do:
> - Start with a png image from old research (like
> http://www.dfanning.com/programs/docs/read_toms_aerosol.jpg)
> - read in the png (yes I know the example is a jpg, but it should be
> the same procedure)
> - extract the "value" at each pixel in the image based on the colorbar

The problem is that this image is not a reflection of "values",
it is a reflection of colors used to represent those values.
And those colors are not built into the palette, which as you
see is just strictly gray scale, but into the fabric of the
image itself. This is not the kind of image you can do science
with, I guess is what I am saying.

An image is encoded with a scheme that can represent 16.7 million
colors. A color table typically contains 256 colors. But, *which*
256!? Obviously, there is no one-to-one relationship.

Suppose you do a statistical analysis and find that out of
the 16.7 million possible triples, you only have 16 in your
image, representing 16 colors. You still don't know the foggiest
thing about the *values* those colors represent, unless you
have information you are not sharing with us. That is to say,
the "meaning" of those color triples is not encoded in the image
in any way. Presumably when you look for a "value", you are looking
for a physically meaningful number. There are no such numbers in
a 24-bit image.

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Working with color, cursor, and png to extract information
Posted by Brian Larsen on Mon, 04 Feb 2008 21:43:54 GMT

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> for a physically meaningful number. There are no such numbers in
> a 24-bit image.

David,

I am not sure I agree with you entirely on this, if it were as hopeless as you say then why do we make those plots, our eyes can obviously decode the "meaning" in the color. Since you have the colorbar, it seems that gives a one-to-one mapping of colors to data value. At the worst case maybe just at the points in the colorbar where you have the value.

If I ask the question another way does it make more sense? How can one choose out of an image a particular color and then display that? For example in that aerosol image of yours say I wanted to know where the data was between 3 and 3.5 (red), I can presumably "select" red and then pull out the red pixels from the image? No? Is this as easy as the 3 elements in image[*,0, 0] and a where statement? I am not too clear on exactly how the colors are built.

Cheers,

Brian

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Brian Larsen
Boston University