Subject: Re: Image activities mapped to colorbar
Posted by davidf on Wed, 03 Jun 1998 07:00:00 GMT
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Koon-Pong Wong (enkpong@encserver.en.polyu.edu.hk) writes:

> I have some data sets of SPECT images that I want to display in a
> window. For example:
>
> IDL> for i=0,30 do tvscl, ImageSeq(*,*,i), i
>
> where "ImageSeq" is a 3D FLTARR which contains a particular slice of the
> brain. Since the images represent the activities in the brain at different
> time, if I display the images with the above way, all of the images would
> be scaled to their own maxima. What I want to do is to display the images
> according to their activities and mapped the activities to a color bar so
> that the first image frame may appear black while the last frame may
> appear grey/white with background still black (assume that I use B/W for
> display). How can I do that ??

Here is the very first rule I teach in my IDL programming
classes:

If color is important to you never, NEVER use TVSCL!

It appears color is important to you here, so what you
have to do is scale the data using the BYTSCL command
and display it with the TV command.

Suppose, for example, that you want to scale the data
into the number of colors you have on your display.
(How many is that? You may not know. You certainly
can't be sure of it. That is *exactly* why you don't
want to be using TVSCL.) But suppose you can count on
200 colors on the monitors your data will typically be
display on.

And suppose that you want to scale the data linearly
between the data values of 10 and 1550. (Let's assume
your data is integer data.) Then you would display the
data like this:

```
IDL> scaledData = BytScl(ImageSeq, Top=199, Min=10, Max=1550)
IDL> FOR j=0,30 DO TV, scaledData(*,*,j), j
```

Now you will see *exactly* what you hoped to see!

These ideas are spelled out in excruciating detail in

my IDL Programming Techniques book. :-)

Cheers,

David

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Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Image activities mapped to colorbar
Posted by enkpong on Thu, 04 Jun 1998 07:00:00 GMT
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Hi folks,

I have some data sets of SPECT images that I want to display in a window. For example:

IDL> for i=0,30 do tvscl, ImageSeq(*,*,i), i

where "ImageSeq" is a 3D FLTARR which contains a particular slice of the brain. Since the images represent the activities in the brain at different time, if I display the images with the above way, all of the images would be scaled to their own maxima. What I want to do is to display the images according to their activities and mapped the activities to a color bar so that the first image frame may appear black while the last frame may appear grey/white with background still black (assume that I use B/W for display). How can I do that ??

Any hints would be greatly appreciated !!

KP.

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Hong Kong Office: DE503d

Subject: Re: Image activities mapped to colorbar
Posted by David Foster on Thu, 04 Jun 1998 07:00:00 GMT
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Koon-Pong Wong wrote:
>
> Hi folks,
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> I have some data sets of SPECT images that I want to display in a
> window. For example:
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> that the first image frame may appear black while the last frame may
> appear grey/white with background still black (assume that I use B/W for
> display). How can I do that ??

Koon-Pong -

You might be interested in a program I wrote called SHOW_IMG that
allows you to display a wide variety of medical images in a variety
of different window configurations. This program can read many different
medical image formats, so long as the images are square, with dimensions
of either {64, 128, 256 or 512}; the image data must be in raw 8-bit
or 16-bit format; there can be an initial header of unknown size, the
image reader will skip over it appropriately.

You say that your images are FLTARR. Is this after pre-processing?
As far as I understand it, SPECT images in raw form are usually
16-bit signed integer data.

You can get this program and many other routines related to medical
imaging at:

ftp://bial8.ucsd.edu pub/software/idl/share

You can download just the SHOW_IMG program and it's required routines,
or get a larger set of routines. There's a README file listing the
routines and their use. All are written for UNIX, most should work
on Windows/Mac without much work. All routines/programs have .doc
documentation files; you can use my LHELP program to view these
easily.

Hope this helps.

Dave
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