Subject: Re: changing contrast and brightness on the fly
Posted by david[2] on Sat, 16 Jun 2001 02:43:18 GMT
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Simon Williams writes:

> I'm looking for tips on how to implement an image display feature that's
> bugging me. I'm new to widget programming, trying to get up to speed
> with David Fanning's book and other helps, but any short-cuts would be
> appreciated.
>
> The job is to display an MRI image and to be able to adjust the image
> brightness and contrast interactively, without going to any special
> widgets like sliders. The control I have in mind is to
> middle-click the image and then have drag right/left control contrast
> and drag up/down control brightness.
>
> The plan is to replicate functionality that the end users (radiology
> folks) are already familiar with from other image viewers. In the
> longer term plan, the display would also be re-sizable and allow
> interactive ROI drawing as well.
>
> It sounds easy but I can't find anything similar described on the web
> etc. to use as a suitable starting point.

Sometimes the things that sound the easiest are really
the hardest. :-)

But in this case, I think you are right. It's
fairly easy. The hard part (it seems to me) is
coming up with the appropriate equation to
go from a movement in pixel space to a change
in contract/brightness. I remember working with
Phil Williams when he was at Children's Hospital
in Cinncinatti and he had a gadget just like this.
I can't recall the equation how, but I seem to
remember it was some kind of high energy particle
field equation, or something. He had chanced upon
it from a previous life as a real physicist. Great
use for it though.

In any case, I think it is likely someone will
offer you something very like this, or at least
a better idea than I can give you. It is a
common feature of medical image processing.
I wouldn't be surprised to see the algorithm in
a medical imaging book.

> Question: is changing the
> contrast and brightness to be achieved by re-defining the
> color table and re-scaling the data?

Yes, I think this is exactly what you need to do.
If you can just find the right scaling equation...

Cheers,

David

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