Subject: Re: color value interpolation from colorbar
Posted by Jeremy Bailin on Fri, 05 Dec 2008 14:36:52 GMT
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On Dec 4, 9:35 pm, "j.coe...@gmail.com" <j.coe...@gmail.com> wrote:
> Thanks everyone. Sorry for the delay, I had to generate the requested
> pics and create a Picasa web album. If there is a better way to post
> images to usenet forums, please let me know.
>
> Below is the Picasa link to the two images requested by Vince and
> Paolo, (1) an example frame grab of a scan, and (2) its colorbar RGB
> plotted against colorbar location:
>
> http://picasaweb.google.com/j.coenia/ColorInterpolation?auth key=H9iPr...
>
> To answer Jeremy's question, the colorbar length is 140 pixels or so
> (scaled here from 1 to 100 on the x axis, which is vertical in the
> scan). You can see from the plot that the colorbar sampling is
> "garbagy." There are two very bright artifacts, at approximately x=20
> and x=80. Such outliers can be tossed or smoothed out somehow I
> think. For simplicity, I just sampled the values down the vertical
> center of the colorbar, as the colorbar tends to bleed a little into
> the dark background near the edges (more errors).
>
> Jeremy's answer makes some sense to me. So is it possible to
> reasonably guess the color levels in that artery using the colorbar on
> the side of the scan? I know there is no scale on the colorbar --
> I've been instructed to assume linear gradient from 1 to 100.
> Radiologists and researchers use these colors; can the computer
> quantify them to extract more meaningful information?
>
> Thanks again.

I think that your colour bar is sampled well enough for the approach I suggested to work. You'll need to smooth out your R,G,B curves first, though - I would first use Peter's suggestion of taking the mean over a few columns within the colour bar, and then I'd pass it through a median filter to get rid of the artifacts and further smooth it.

I quite like Peter's approach, actually - assuming that the curves can be fit to a sufficiently low-order polynomial, which you'll have to check. It should be a lot faster, and is definitely more elegant! The approach I suggested should work pretty generically for any bizarre colour table, but yours looks it would be reasonably well-behaved once smoothed.

-Jeremy.