Subject: Re: A way to measure image blur / glow?
Posted by rogass on Sat, 09 Jan 2010 08:15:26 GMT
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On 9 Jan., 03:13, James <donje...@gmail.com> wrote:
> I'm working with a set of vascular images, taken on a cryo-microtome
> (see my post "An Introduction" from Nov. 17 for more info). The
> images are acquired by filling blood vessels of a biological sample
> with fluorescent polymer, and repeatedly taking photographs after
> slicing off a tiny layer of tissue. One major problem is that
> fluorescent material behind the current slice gives off enough light
> to show up in the image, resulting in a diffuse glow around the
> vessels of interest.
>
> I've been trying out the next-image subtraction algorithm
(http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2743343/), wherein the
> next slice behind the image of interest is blurred, attenuated, and
> subtracted from the current slice. The preliminary results look very
> good, but I'm looking for a way to automate the choice of optimal
> parameter choices for the Gaussian blur radius and the attenuation
> factor. So basically, I'm looking for a measure of how sharp, or glow-
> free, an image is. I've considered the fact that glow is not quite
> the same thing as blur. With glow, the features are still sharp, but
> there are haloes of not-as-bright pixels around them. With blur,
> there are no sharp edges.
>
> My professor suggested measuring the magnitude of low frequencies in
> the Fourier Transform of the image, but that lead to the computer
> picking the image where nearly all of the data - glow or not - had
> been subtracted! So basically, I'm asking if anyone knows a good way
> to measure this without inadvertently subtracting useful data or
> creating false data.
>
> Thanks,
> James Preiss

Maybe a look on the entropy along and across edges will give you some hints for blurring. May also be that anisotropic diffusion solves your problems. The halos might be weakened by a histogram linearisation based on, e.g. native IDL routine or the asinh-approach from David Fanning.

Regards Chris