
Subject: Re: STANDARD DEVIATON

Posted by [Struan Gray](#) on Fri, 04 Aug 2000 07:00:00 GMT

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I wrote:

> It's possible I'm missing something

and then, about four seconds after I hit the submit button, realised what it was I was missing: for a corner pixel of any given 9x9 area my method subtracts the mean of a different 9x9 area centred on the corner pixel.

Still, my method is about twenty times faster than Ben_imageSD which in turn is about four times faster than IDL_imageSD, so there's a lot of incentive to find a hack.

The traditional way to speed up the loops would be to buffer the calculation of the running average. For example, instead of adding elements i-1, i, and i+1 of each row you remember the sum from last time, subtract i-2 and add i+1. With a 9-element kernel this won't help a lot, but it will a bit.

If you're not too worried about edge effects (and your posted code wasn't), you could always create nine copies of the (float(image) - localmean) array from my function, each with the localmean array shifted by different amounts (use the SHIFT function to avoid recalculation). Then you'd just have to shift them back to line up the pixels, square them and take the sum. This could be done as a loop over the 9x9 kernel elements if you don't have the memory or disk space to hold all the copies in memory at once.

Struan
