
Subject: Re: thresholding/color question

Posted by [Craig Markwardt](#) on Mon, 07 Feb 2000 08:00:00 GMT

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Alex Schuster <alex@pet.mpin-koeln.mpg.de> writes:

> David Fanning wrote:

>

>> Then, I'd scale my image data like this:

>>

>> scaledImage = BytScl(image, Top=!D.Table_Size-4)

>>

>> I'd find the red pixels and assign them like this:

>>

>> redPixels = Where(image GT threshold, count)

>> IF count GT 0 THEN scaledImage[redPixels] = !D.Table_Size-2

>

> Isn't the usage of WHERE discouraged because of being slow? I always use

> direct matrix operation for this, like:

>

> redmask = scaledImage GT threshold

> scaledImage = scaled_Image * (1B-redmask) + byte(!D.Table_Size-2) * redmask

I'm not sure the masking technique will always be faster. If you do an operation count, then you can see that the masking operation costs $4*N$ operations, where N is the number of pixels. (operations are "GT", "*" (twice) and "-" (once))

The WHERE technique involves somewhere between N and $2*N$ operations, depending on how many pixels are above threshold (one to do the "GT" operation, and then between 0 and N to do the scatter operation on scaledImage). However, I will grant that the scatter operation is probably slower than a flat-out matrix multiply.

Therefore, I would argue that for large images with few red pixels, the WHERE operation would be superior (and as David says, use less memory). Anybody care to bring this into the real world?

Craig

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