Subject: Re: Gradient of an Image in IDL
Posted by Hermann Mannstein on Thu, 05 Jun 1997 07:00:00 GMT
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David Foster wrote:
>
> Brad Cadle wrote:
>>
>> HI all,
>> I was wondering if someone knows of an optimized IDL routine to
>> compute the gradient of an image, I ported one over from C where the
>> gradient is generated in fourier space, but I was interested to find
>> if one was optimized for IDL.
>
> One alternative is to use CALL_EXTERNAL() to interface to your (already
> optimized) C routine, which would require slight modifications to the
> routine. I can mail you examples of using this method if you're
> interested.
>
> Dave

I'm not shure that it is really optimized, and there are different ways
to
define the gradient, but the following works on 2-d images and gives a
centered
absolute value and the angle in degree - i.e. it uses all surrounding
pixels.
The convolution with an 3X3 array is quite fast.

```
function sin_kern0
a=[ [
 0.7071067812,1.,0.7071067812],[0.,0.,0.],[-0.7071067812,-1., -0.7071067812]
]
return,a
end

function cos_kern0
a = [
 [-0.7071067812,0.,0.7071067812],[-1.,0.,1.],[-0.7071067812,0 .,0.7071067812]
]
return,a
end

pro gradient,input,gradient,ang
r2deg = -90./!pi

cu = float(input)
a = sin_kern0()
```

```
s = convol(cu,a)
a = cos_kern0()
c = convol(cu,a)
gradient= sqrt(s*s + c*c)
ang    = atan(s,c) * r2deg
return
end
```

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Regards,

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