Subject: Low pass filter - Problem with kernel
Posted by Vidhya on Tue, 03 Oct 2006 11:23:48 GMT
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Dear All,

Stuck with the error message:

"% CONVOL: Incompatible dimensions for Array and Kernel.
% Execution halted at: $MAIN$"

while trying to apply a low pass filter to one of my image data.

The array dimensions for kernel is
IDL> help, kernel
KERNEL FLOAT = Array[3, 3]
IDL> help, column_log
COLUMN_LOG FLOAT = Array[1, 374]

Since i am new to IDL, your help is appreciated.

Is it that the array size for kernel should be less than the image size?

Also, I have serious troubles in redirecting the results to HDF format.

Unfortunately, I am able to create a HDF file but to see only a noisy data without any image.

Thanks in advance,

Vidhya Kamalesh

Subject: Re: Low pass filter - Problem with kernel
Posted by James Kuyper on Wed, 04 Oct 2006 16:23:06 GMT
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Vidhya wrote:
> Dear All,
> Sorry for not giving a detailed description of the program. The
> following is the program, which tries to apply a low pass filter to an
> image of size, 766*374 with 62 bands.
>
> PRO vnoise
> filename='image.hdf'
> hdfid=hdf_sd_start(filename, /READ)
>

> varid=hdf_sd_select(hdfid, 0)
> hdf_sd_getdata, varid, image
>
>
> varid=hdf_sd_select(hdfid, 1)
> hdf_sd_getdata, varid, mask
>
> hdf_sd_end_access, varid
>
>
> hdf_sd_end, hdfid
>
>
> column_average=rebin(image, 1, 374, 62)
>
>
> ;applying the log to the average radiance of the image
> column_log = alog10(column_average)
>
> ksize = [3,3]
>
>
> kernel = replicate((1.0/(ksize[0]*ksize[1])), ksize[0], ksize[1])
>
>
> filtered_image = convol(float(column_log), kernel, /CENTER,
> /EDGE_TRUNCATE)

The problem here is that column_log is a 1x374x62 array, while kernel is a 3x3 array. The number of dimensions of the two arguments has to be the same, and each dimension of the kernal should, in general, be no larger than the corresponding dimension of the first argument.

I'm not quite sure what you're trying to do here. Which dimensions do you want to do your convolution on? If it's the two spatial dimensions of the image, than you should be passing a 776x374 image to convol. If you only want to convolve along the X direction, you should use a kernel that has a length of only 1 in the other two dimensions.

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> And this is where I get the error message about the dimensions.
>
> What I am trying to do is to rebin the image column-wise, apply a log

> to the average, and then apply the kernel to the image.

If you want to convolve the image, why are you convolving the column_log instead? What role do you want the column_log to play in the convolution of the image? If you do in fact want to convolve the column_log instead of the image itself, then you need to choose a kernel which has the right shape to be used for that purpose.

Subject: Re: Low pass filter - Problem with kernel
Posted by Vidhya on Tue, 10 Oct 2006 13:08:35 GMT
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Thank you, James. Now I have overcome the problem of kernel selection, I indeed rebin my kernel to suit to the column_log dimensions as a 1*5 kernel.

Thanks very much.

On Oct 4, 5:23 pm, kuy...@wizard.net wrote:
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