
Subject: Re: Correlation between bands using IDL
Posted by [d.poreh](#) on Tue, 03 Aug 2010 12:34:19 GMT
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On Aug 3, 2:30 am, Lavanya <lavany...@gmail.com> wrote:

> Hi,
>
> I am pretty much new in using IDL. I have been trying to read
> multiband image data using `envi_select` and `envi_file_query`, where i
> get the information about the data im using.
> Now how could i find the correlation between any two bands (here the
> number of bands i have is 242)
> Finally i need to generate a output correlation matrix of $242 * 242$.
> Please help me how can i go about.
>
> Thanks

It does not make sense to find correlation matrix of $242 * 242$. I
think what you need is using the Principal component analysis (PCA).
With this you
could find the maximum variance which presents the maximum variation.
And you can decrease your number of bands to few factors. David has a
very good article about that: http://www.dfanning.com/code_tips/pca.html
Cheers
Dave

Subject: Re: Correlation between bands using IDL
Posted by [rogass](#) on Wed, 04 Aug 2010 06:49:28 GMT
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On 3 Aug., 11:30, Lavanya <lavany...@gmail.com> wrote:

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> multiband image data using `envi_select` and `envi_file_query`, where i
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> Thanks

Hi,
i don't understand what you want to do. Do you want to correlate
pixel1 band1 with pixel2 band2, pixel1 band1 with pixel2 band3 and so
on for all pixel and bands?

Regards Chris

Subject: Re: Correlation between bands using IDL
Posted by [Lavanya](#) on Thu, 05 Aug 2010 05:10:16 GMT
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On Aug 4, 11:49 am, chris <rog...@googlemail.com> wrote:
> On 3 Aug., 11:30, Lavanya <lavany...@gmail.com> wrote:
>
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>
> Regards Chris

I wanted to find the correlation between
band1 band2, band1 band 3, band 1 band 4
band 2 band 1, band 2 band 3, band 2 band 4 and so on. Final result
should be of the matrix form $n * n$ where n will be the number of bands
of the same image. Here i am using only one image which has 'n' bands

Please help

-Lavanya

Subject: Re: Correlation between bands using IDL
Posted by [rogass](#) on Thu, 05 Aug 2010 07:25:58 GMT
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On 5 Aug., 07:10, Lavanya <lavany...@gmail.com> wrote:
> On Aug 4, 11:49 am, chris <rog...@googlemail.com> wrote:

```

>
>
>
>
>
>> On 3 Aug., 11:30, Lavanya <lavany...@gmail.com> wrote:
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> should be of the matrix form n * n where n will be the number of bands
> of the same image. Here i am using only one image which has 'n' bands
>
> Please help
>
> -Lavanya

```

Ok, as far as I understand you want to compute the Band-To-Band correlations. You could do this (not vectorized) in this way:

```

IDL> n=242
IDL> image_size_x=10
IDL> image_size_y=10
IDL> image=randomn(seed,image_size_x,image_size_y,n)
IDL> l=lindgen(n,n) mod n
IDL> xind=l[*]
IDL> yind=(temporary(transpose(l)))[*]
IDL> corr=fltarr(n,n)
IDL> for i=0l,(n*n)-1l do corr[i] = correlate((image[*,*xind[i]])[*],

```

```
(image[*,*,yind[i]])[*])  
IDL> corr=reform(corr,n,n,/over)  
IDL> tvscl, corr
```

Hope it helps

CR
