
Subject: Re: FFT+inverse FFT

Posted by [David Fanning](#) on Sun, 05 Dec 2010 19:06:30 GMT

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Natalya Lyskova writes:

```
> Hey! I'm a beginner at IDL and have problem with FFT. I'm trying to
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Cheers,

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David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: FFT+inverse FFT

Posted by [burton449](#) on Sun, 05 Dec 2010 20:05:30 GMT

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On Dec 5, 2:06 pm, David Fanning <n...@dfanning.com> wrote:

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Thank you,
Max

Subject: Re: FFT+inverse FFT
Posted by [Jeremy Bailin](#) on Mon, 06 Dec 2010 14:16:07 GMT
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On Dec 5, 12:48 pm, Natalya Lyskova <natalya.lysk...@gmail.com> wrote:
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> perform 2d-FFT but the code doesn't work properly even on test images.
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> Thank for help,
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```

As a side note, a better (both faster and more readable) way of creating the original image instead of the double FOR loop is:

```

if (x1[i] le 20.0 and x1[i] ge 0.0 and x2[j] le 20.0 and x2[j] ge
0.0) then begin
  ytest[i,j]=1.0

upperright = where(x1 le 20.0 and x1 ge 0.0 and x2 le 20.0 and x2 ge
0.0, nupperright)
if nupperright gt 0 then ytest[upperright]=1.0

```

-Jeremy.

Subject: Re: FFT+inverse FFT

Posted by [lecacheux.alain](#) on Mon, 06 Dec 2010 15:10:24 GMT

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On 6 déc, 15:16, Jeremy Bailin <astroco...@gmail.com> wrote:

```

> On Dec 5, 12:48 pm, Natalya Lyskova <natalya.lysk...@gmail.com> wrote:
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> -Jeremy.- Masquer le texte des messages précédents -

>

Even simpler since IDL 8.0:

```
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NULL)]=1.0
```

alx.

Subject: Re: FFT+inverse FFT

Posted by [pgrigis](#) on Mon, 06 Dec 2010 15:28:17 GMT

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On Dec 5, 3:05 pm, burton449 <burton...@gmail.com> wrote:

> On Dec 5, 2:06 pm, David Fanning <n...@dfanning.com> wrote:

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Taking a DFT (Discrete Fourier Transformation) of an array is possible for any array size. There is an algorithm called FFT (Fast Fourier Transformation)

that happens to be very efficient if the size is in the form 2^N for some N.

However, modern incarnations of FFT can deal with other sizes too, albeit less efficiently (the smaller the factors in the prime decomposition of the size, the better).

Please don't let what a particular software does or fail to do be your guide to what is possible or not (from a mathematical standpoint). If you want to learn a bit more about the FFT, read for instance the chapter about it on the numerical recipes book.

Ciao,
Paolo

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> Thank you,
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Subject: Re: FFT+inverse FFT
Posted by [Timm Weitkamp](#) on Mon, 06 Dec 2010 16:26:36 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Dec 6, 4:10 pm, alx <lecacheux.al...@wanadoo.fr> wrote:

> Even simpler since IDL 8.0:
>
> ytest[where(x1 le 20.0 and x1 ge 0.0 and x2 le 20.0 and x2 ge 0.0, /
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Or, even simpler, and without a need for v8.0:

ytest = (x1 le 20.0 and x1 ge 0.0 and x2 le 20.0 and x2 ge 0.0)

Cheers
Timm

Subject: Re: FFT+inverse FFT
Posted by [burton449](#) on Tue, 07 Dec 2010 02:33:39 GMT
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On Dec 6, 10:28 am, Paolo <pgri...@gmail.com> wrote:

> On Dec 5, 3:05 pm, burton449 <burton...@gmail.com> wrote:

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Hi Paolo,

Thank you for your comment. As a student in Remote Sensing, I have a lot of basic things to understand. The image I would like to filter in the frequential domain (using a Butterworth filter) is a side scan sonar image mosaic of 9166 x 4093 pixels. Would you recommend a FFT and if yes would you use a special algorithm?

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> and if yes would you use a special algorithm?
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> greetings,
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Well if it's just a single image, then you can certainly go ahead
and implement filtering with the FFT - the array is pretty big
and it will take a little while. If performance becomes an
issue, you can expand it to 9216x4096 and it should run a bit
faster.

Ciao,
Paolo
