Subject: Re: pixelwise regression for time series images
Posted by Bringfried Stecklum on Thu, 13 May 2010 09:57:52 GMT
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blofton wrote:
> I've written a program that uses LINFIT to calculate a linear model to
> each pixel in a multitemporal, registered series of images. That is,
> I fit a line in the time (z-) dimension at each x,y pixel location.
> However, I am using nested loops to do this and it takes a while to
> run. For larger images (1024X1024) there is no hope. I am wondering
> if you've come across a better (IDL-esque) method of doing this; I've
> not seen anything online.
>
> Thanks for any suggestions,
>
> brad

One can do that without loops. Just write down the regression equations, keeping in mind that the summation has to be done for the 3rd dimension. Actually this is what I like about IDL, you can think of bigger entities than just a single value. I attached a function which works for me.

Regards,
Bringfried

File Attachments

1) lincfit.pro, downloaded 129 times

Subject: Re: pixelwise regression for time series images
Posted by David Fanning on Thu, 13 May 2010 12:28:29 GMT
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Bringfried Stecklum writes:

> One can do that without loops. Just write down the regression equations, keeping
> in mind that the summation has to be done for the 3rd dimension. Actually this
> is what I like about IDL, you can think of bigger entities than just a single
> value. I attached a function which works for me.

Wow. Aside from how elegant this is, it really makes you appreciate how hard it was to read IDL code before the advent of square brackets, doesn't it? :-)

Cheers,

David

--
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: pixelwise regression for time series images
Posted by David Fanning on Thu, 13 May 2010 14:48:10 GMT
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Bringfried Stecklum writes:

> One can do that without loops. Just write down the regression equations, keeping
> in mind that the summation has to be done for the 3rd dimension. Actually this
> is what I like about IDL, you can think of bigger entities than just a single
> value. I attached a function which works for me.

Looks like we might also need "ima2cube".

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thue. ("Perhaps thos speakest truth.")

Subject: Re: pixelwise regression for time series images
Posted by Craig Markwardt on Thu, 13 May 2010 15:51:27 GMT
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On May 13, 8:28 am, David Fanning <n...@dfanning.com> wrote:
> Bringfried Stecklum writes:
>> One can do that without loops. Just write down the regression equations, keeping
>> in mind that the summation has to be done for the 3rd dimension. Actually this
>> is what I like about IDL, you can think of bigger entities than just a single
>> value. I attached a function which works for me.
>
> Wow. Aside from how elegant this is, it really makes
> you appreciate how hard it was to read IDL code
> before the advent of square brackets, doesn't it? :-)

Heh, I still think in round () array indices. To me, the notation thing is a wash. Switching to [] indexing makes less confusion with function calls. On the other hand, use of [] is confused with the array constructor, x = [a,b,c].

Craig

Subject: Re: pixelwise regression for time series images
Posted by David Fanning on Thu, 13 May 2010 16:14:02 GMT
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Craig Markwardt writes:

> Heh, I still think in round () array indices. To me, the notation
> thing is a wash. Switching to [] indexing makes less confusion with
> function calls. On the other hand, use of [] is confused with the
> array constructor, x = [a,b,c].

I'm willing to make an exception for anyone still using
IDL 4.0. :-)

By the way, I spent the evening talking to a friend
about IDL 8. I get more and more excited about this
daily. I wish I had more time to play with it.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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Sepore ma de ni thue. ("Perhaps thos speakest truth.")
