Subject: Re: chi^2 minimisations & calling c
Posted by Craig Markwardt on Tue, 14 Oct 2003 16:52:05 GMT
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danb@star.herts.ac.uk (Dan B) writes:
> Hi peeps.
>
> Before I go and get Ronn Klings book on calling c from IDL am I going
> to be able
> to code a chi^2 minimisation routine?

We can't speak for your abilities to code a minimization routine.
It's certainly possible, and IDL doesn't forbid it.

Strange, but I find that I have zero sympathy for people using DLMs
and CALL_EXTERNAL. Especially in a case like this, where good chi^2
minimization routines exist in IDL already, why reinvent the wheel?
Debugging the internal interface to IDL will take a lot of time.

Craig

P.S. For example MPFIT,
http://cow.physics.wisc.edu/~craigm/idl/idl.html

--
---------- ----------
Craig B. Markwardt, Ph.D. EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: chi^2 minimisations & calling c
Posted by Rick Towler on Tue, 14 Oct 2003 17:21:19 GMT
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"Dan B" wrote...

> Before I go and get Ronn Klings book on calling c from IDL am
> I going to be able to code a chi^2 minimisation routine?

Yes. If you can code it, it will come.

> The c program is already written and needs 6 parameters passed
> to it. It then does its thing and outputs a formatted ascii
> file (the model based on the parameters :D).

<snip>

> I'm pretty sure that this is going to be possible, and that Ronn's
> book is going to be of some help (p.s. I've seen copies going for $180
> on amazon :eek:) I just want to be sure.

Wow! $180! I'll sell you mine for $100, complete with margin notes and latte stains. Or, you could go to his website and spend $40.
www.kilvarock.com

As much as I think that every serious IDL programmer (all 7 of us) should master the dlm, I don't think you would need to go thru the trouble unless you view this as a fun exercise. CALL_EXTERNAL should work with minimal effort but it does assume that your functions use the argc-argv calling convention and this might be where you are getting hung up.

> oh, and I don't suppose anyone is going to be cheeky enough to give me
> a helping head start? :D I've mucked around with call_external, but
> it all goes horribly wrong, as, quite frankly, I don't understand the
> help files.

If you need to go the dlm route because you can't or don't want to make your function work with CALL_EXTERNAL all you really need to do is wrap your function inside the dlm. I wish I could point you to a proper example in the IDL distribution which would illustrate the passing of different data types back and forth but RSI's effort in this area is really pitiful.
Ronn's book is the way to go.

Good luck!

-Rick

Subject: Re: chi^2 minimisations & calling c
Posted by Rick Towler on Tue, 14 Oct 2003 21:46:10 GMT
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"Rick Towler" wrote...
>
> As much as I think that every serious IDL programmer (all 7 of us) should
> master the dlm, I don't think you would need to go thru the trouble unless
> you view this as a fun exercise. CALL_EXTERNAL should work with minimal
> effort but it does assume that your functions use the argc-argv calling
> convention and this might be where you are getting hung up.

A kind person from RSI informed me that the AUTO_GLUE keyword can work wonders if your function doesn't follow the argc-argv calling convention.
Given the function prototype of your chi^2 routine it should be easy to use CALL_EXTERNAL with the AUTO_GLUE keyword.

AUTO_GLUE relies on MAKE_DLL so you'll need to make sure your !MAKE_DLL system variable is set up correctly.

-Rick

Subject: Re: chi^2 minimisations & calling c
Posted by danb on Wed, 15 Oct 2003 09:52:39 GMT
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Thanks for the comments guys. I will be using an already written chi^2 code like cti_test or linfit, whichever is more appropriate.

If I was running the c program from the command line I would pass the parameters to it there e.g.

> ./program x y z a b c
>

forgive my ignorance but is this an example of argc-argv calling convention?

Just for the record (if any of you need a quick bit of cash :D)
www.amazon.com/exec/obidos/tg/stores/offering/list/-/0967127 025/all/ref=dp_bb_a/102-6427530-6849768

Subject: Re: chi^2 minimisations & calling c
Posted by Richard French on Wed, 15 Oct 2003 11:09:45 GMT
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>
> Just for the record (if any of you need a quick bit of cash :D)
> www.amazon.com/exec/obidos/tg/stores/offering/list/-/0967127 025/all/ref=dp_bb_
> a/102-6427530-6849768

That is amazing: $193.99 as the price for a used copy of a book that is still in print and available for $30! I've sent an inquiry to the seller to see if they can account for the high price, and if they can justify the 'Low Price' designation on the Amazon web-page for this offering. Caveat emptor!

Dick French

Subject: Re: chi^2 minimisations & calling c

Posted by Rick Towler on Wed, 15 Oct 2003 17:52:22 GMT
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"Dan B" wrote ...

> If I was running the c program from the command line I would pass the
> parameters to it there e.g.
>
>> ./program x y z a b c
>>
>
> forgive my ignorance but is this an example of argc-argv calling
> convention?

It appears you have an executable that may or may not call a shared library?
If you do have a shared object file (.so, .dll) , is there a specific reason
you want to directly call it's functions? Or are you possibly confusing
CALL_EXTERNAL which calls functions in external libraries with SPAWN which
executes external programs?

Since you have a command line executable you might think about using SPAWN.
Something like:

```
x=0.
y=0.
z=0.
a=1
b=2
c='outfile.dat'

SPAWN, '/path/to/program ' + STRTRIM(x,2) + ' ' + STRTRIM(y,2) +
  STRTRIM(z,2) + ' ' + STRTRIM(a,2) + ' ' + STRTRIM(b,2) + c
```

-Rick

Subject: Re: chi^2 minimisations & calling c
Posted by danb on Thu, 16 Oct 2003 14:16:30 GMT
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Rick, you are a genius :)

That works a treat! Just what I needed, thanks.

i do like the way that there is no mention of "spawn" in the help

files, but it runs it quite happily.

Subject: Re: chi^2 minimisations & calling c
Posted by David Fanning on Thu, 16 Oct 2003 14:44:31 GMT
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Dan B writes:

> i do like the way that there is no mention of "spawn" in the help
> files, but it runs it quite happily.

You must have spilled it wrong! :-)

Cheers,

David
--
David W. Fanning, Ph.D.
Fanning Software Consulting, Inc.
Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: chi^2 minimisations & calling c
Posted by danb on Thu, 16 Oct 2003 17:15:02 GMT
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> You must have spilled it wrong! :-)
>

Indied. Had to scroll down the page, doh.

I am now having real trouble trying to get mpfit to work with spawn in
the function_name though. When I ddread the model data points back I
get told:

% CLOSE: Variable is undefined: LUN.
% Error occurred at: DDREAD 302

which I find a little confusing.

The general routine goes like:

> function bla
>

> spawn program with a b c d e f
>
> x =ddread(modeldatapoints)
> y =ddread(truedatapoints)
>
> end
>
> pro blabla
>
> p =[a,b,c,d,e,f]
>
> fit = mpfit(x, y, p, FUNCTION_NAME=bla)
>
> end

I suspect there is a really obvious reason why this kind of thing will
never work. : (

Subject: Re: chi^2 minimisations & calling c
Posted by Paul Van Delst[1] on Thu, 16 Oct 2003 17:41:25 GMT
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Dan B wrote:
>
>> You must have spilled it wrong! :-)
>>
>
> Indied. Had to scroll down the page, doh.
>
> I am now having real trouble trying to get mpfit to work with spawn in
> the function_name though. When I ddread the model data points back I
> get told:
>
> % CLOSE: Variable is undefined: LUN.
> % Error occurred at: DDREAD   302
>
> which I find a little confusing.

You get this error in DDREAD when the file you are trying to read does not exist. Maybe
you spilled the filename variable incorrectly, too?

paulv

--
Paul van Delst
CIMSS @ NOAA/NCEP/EMC
Ph: (301)763-8000 x7748

Fax:(301)763-8545

Subject: Re: chi^2 minimisations & calling c
Posted by Craig Markwardt on Thu, 16 Oct 2003 17:50:16 GMT
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danb@star.herts.ac.uk (Dan B) writes:

>> You must have spilled it wrong! :-)
>>
>
> Indied. Had to scroll down the page, doh.
>
> I am now having real trouble trying to get mpfit to work with spawn in
> the function_name though. When I ddread the model data points back I
> get told:
>
> % CLOSE: Variable is undefined: LUN.
> % Error occurred at: DDREAD 302

Please, take MPFIT out of the situation. First, get your model to
work by calling it alone, without MPFIT. When you are confident that
it works (repeatedly), then try to combine it with the fitter.
Think about why LUN could be undefined within DDREAD. Do you really
think it's a problem with the fitting? Probably not. It sounds more
like an I/O problem, so you need to solve that first.

>> function bla
>>
>> spawn program with a b c d e f
>>
>> x =ddread(modeldatapoints)
>> y =ddread(truedatapoints)
>>
>> end

Obviously this can't be correct since MODELDATAPOINTS and
TRUEDATAPOINTS do not exist as variables.

>> pro blabla
>>
>> p =[a,b,c,d,e,f]
>>
>> fit = mpfit(x, y, p, FUNCTION_NAME=bla)

MPFIT does not have a FUNCTION_NAME keyword.

Good luck,
Craig
