Subject: Re: optimization using IDL
Posted by PREUSSER on Fri, 20 Sep 1996 07:00:00 GMT
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In article <323DE338.41C67EA6@gojira.berkeley.edu>, Karl Young <karl@gojira.berkeley.edu> wrote:

> I know this has been discussed before and I apologize for any
> redunancy. I am finding IDL's curvefit inadequate for the types
> of optimization I need to do. For one thing I need to do
> constrained optimization. I hacked curvefit to do a kludgy
> version of constrained optimization and a coleague put
> together an even better version but I'm at the point at which
> I really need an "industrial strength" constrained optimizer.
> (I went through the section in Bevington's book from which
> IDL's curvefit was culled and there didn't seem to be any really
> obvious ways to extend that algorithm to do the kind of
> constrained optimization that you find in modern textbooks on
> optimization, i.e. I generally couldn't find any way of
> extending standard Marquardt-Levinson type optimization, but
> maybe I'm reading the wrong books)
>
> So my question is; has anybody been in this situation with
> IDL and if so how did they deal with it ? E.g. has anybody
> written more sophisticated optimization code in IDL, do
> people generally call external Fortran or C routines from
> commercial or shareware packages, ... ? Any comments or
> suggestions greatly apreciated,
>
> -- Karl Young karl@gojira.berkeley.edu

Karl,
I have to make two comments on your request:

1) I have developped a curve fitting program running with PV-Wave Advantage that allows generating starting values close to the desired solution, so that often you do not need to apply special constraints. At the moment, it is limited to fit with a sequence of Gaussians and a quadratic polynomial. But you are able to keep any parameter constant, that is, force it to a certain value. The called solver is that of PV-Wave Advantage, the Levenberg-Marquardt from Minpack. Anybody interested can download the latest version from the following address:
http://www.fhi-berlin.mpg.de/~grz/pub/preusser.html

2) If you still need to use a solver with constraints of "industrial strength", I recommend you to contact
WTI@aol.com or http://members.aol.com/WTI

They are a company specializing in constrained optimization, and offer industrial solution at resonable prices. It is a group split from IMSL.

Hope that will help you and others interested in this topic.

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