
Subject: Genetic algorithms and curve fitting
Posted by [robert.dimeo](#) on Thu, 27 Mar 2003 21:26:10 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

Over the past few years I have been writing IDL programs to analyze data by fitting to models using standard least-squares methods. The problems that we face here, however, sometimes are not amenable to the least-squares approach and, having multi-modal chi-squared surfaces, could benefit from a more robust global optimization. I have been working on a hybrid genetic algorithm/least squares function that appears to work "pretty well" for model fitting.

Has anyone on this newsgroup you used GAs or GA hybrids for data fitting? I am seeking someone with whom I can "compare notes" and discuss what works well and what does not. I am happy to share this code with anyone (especially if you're interested in helping me improve it!)

Many thanks in advance!

Rob

Robert M. Dimeo, Ph.D.
NIST Center for Neutron Research
National Institute of Standards and Technology
100 Bureau Drive - Stop 8562 Gaithersburg, MD 20899-8562
Telephone: (301) 975-8135 FAX: (301) 921-9847

www.ncnr.nist.gov/staff/dimeo

Subject: Re: Genetic algorithms and curve fitting
Posted by [Allard de Wit](#) on Fri, 28 Mar 2003 16:10:37 GMT
[View Forum Message](#) <> [Reply to Message](#)

Rob Dimeo wrote:

> Hi,
>
> Over the past few years I have been writing IDL programs to analyze
> data by fitting to models using standard least-squares methods. The
> problems that we face here, however, sometimes are not amenable to the
> least-squares approach and, having multi-modal chi-squared surfaces,
> could benefit from a more robust global optimization. I have been
> working on a hybrid genetic algorithm/least squares function that
> appears to work "pretty well" for model fitting.
>

> Has anyone on this newsgroup you used GAs or GA hybrids for data
> fitting? I am seeking someone with whom I can "compare notes" and
> discuss what works well and what does not. I am happy to share this
> code with anyone (especially if you're interested in helping me
> improve it!)

>

> Many thanks in advance!

>

> Rob

> -----

> Robert M. Dimeo, Ph.D.
> NIST Center for Neutron Research
> National Institute of Standards and Technology
> 100 Bureau Drive - Stop 8562 Gaithersburg, MD 20899-8562
> Telephone: (301) 975-8135 FAX: (301) 921-9847

>

> www.ncnr.nist.gov/staff/dimeo

Hi Rob,

I do not have an extensive knowledge of GA techniques but for the relatively simple optimisation problems that I have used GA's for I used a so-called micro-GA which worked pretty well. I implemented the micro-GA in IDL code, you can find the code at www.xs4all.nl/~ajwwag/

As it this GA was my first attempt to write something in IDL using object-oriented programming, the programming style may be somewhat clumsy, any comments on the code (errors/fixes) are welcome. Maybe, it is usefull for you.

best regards,

Allard de Wit

Subject: Re: Genetic algorithms and curve fitting
Posted by [pford](#) on Wed, 23 Apr 2003 18:57:51 GMT
[View Forum Message](#) <> [Reply to Message](#)

"A. De Wit" <adewit@operamail.com> wrote in message
news:<[3e8473ac\\$0\\$49109\\$e4fe514c@news.xs4all.nl](mailto:3e8473ac$0$49109$e4fe514c@news.xs4all.nl)>...

> Rob Dimeo wrote:

>> Hi,

>>

>> Over the past few years I have been writing IDL programs to analyze
>> data by fitting to models using standard least-squares methods. The
>> problems that we face here, however, sometimes are not amenable to the

>> least-squares approach and, having multi-modal chi-squared surfaces,
>> could benefit from a more robust global optimization. I have been
>> working on a hybrid genetic algorithm/least squares function that
>> appears to work "pretty well" for model fitting.
>>
>> Has anyone on this newsgroup you used GAs or GA hybrids for data
>> fitting? I am seeking someone with whom I can "compare notes" and
>> discuss what works well and what does not. I am happy to share this
>> code with anyone (especially if you're interested in helping me
>> improve it!)
>>
>> Many thanks in advance!
>>
>> Rob
>> -----
>> Robert M. Dimeo, Ph.D.
>> NIST Center for Neutron Research
>> National Institute of Standards and Technology
>> 100 Bureau Drive - Stop 8562 Gaithersburg, MD 20899-8562
>> Telephone: (301) 975-8135 FAX: (301) 921-9847
>>
>> www.ncnr.nist.gov/staff/dimeo
>
> Hi Rob,
>
> I do not have an extensive knowledge of GA techniques but for the
> relatively simple optimisation problems that I have used GA's for
> I used a so-called micro-GA which worked pretty well. I implemented
> the micro-GA in IDL code, you can find the code at
> www.xs4all.nl/~ajwwag/
>
> As it this GA was my first attempt to write something in IDL using
> object-oriented programming, the programming style may be somewhat
> clumsy, any comments on the code (errors/fixes) are welcome.
> Maybe, it is usefull for you.
>
> best regards,
>
> Allard de Wit

I used a simple GA in the past written in C and called using
CALL_EXTERNAL. I will be happy to send this to you. I am in the SLOW
process of converting it to DLM on MacOS X. I have to relearn IDL and
learn Unix and gcc, etc.

Patrick Ford, MD
Baylor College of Medicine

pford@*nospam*bcm.tmc.edu
