
Subject: Re: Help with Search Algorithm

Posted by [velt](#) on Mon, 22 Aug 1994 19:40:43 GMT

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In article s4d@usenet.INS.CWRU.Edu, kump@morph.ebme.cwru.edu (Kenneth S. Kump) writes:

- > I have an arbitrary function, "funct", which has 4 parameters.
- > I have input, "x" and output, "y". I would like to use a method
- > to search for the optimal 4 parameters. I found NR_DFPMIN, but
- > my function is quite complex and I cannot calculate analytical partial
- > derivatives. I also found SVDFIT which is supposed to work for
- > polynomials, but will also take arbitrary functions--I have tried to use
- > this, but it keeps crashing IDL. RSI says consult manual, and I cannot
- > find info on user-supplied functions.
- >
- > If you know of another function (such as in NR, simplex method), or
- > can help me with SVDFIT or DFPMIN, I'd appreciate it.

I have used curvefit from the IDL users library, but I think you can use NR_DFPMIN just as well. If you can't calculate the gradient analytically, calculate it numerically:

$$\text{gradient} = 1/\text{delta} * (\text{Funct}(x+\text{delta}) - \text{Funct}(x))$$

You can calculate the partial derivatives for each variable this way. Choose a delta that is small compared to the distance over which Funct varies with x (the analytical gradient is the limit for delta -> 0).

Good Luck.

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