Subject: Re: Assign data point to n-Dimensional grid
Posted by antar3s86 on Fri, 22 Jun 2012 15:38:57 GMT
View Forum Message <> Reply to Message

On Friday, June 22, 2012 5:14:01 PM UTC+2, Kenneth P. Bowman wrote:
>
>> Hi
>>
>> I face a serious problem in the development of my algorithm.In principle it
>> is very simple:
>>
>> I have a data point in a 9-dimensional parameter space (say,
>> x1,x2,x3,y1,y2,y3,z1,z2,z3) with x,y,z being physical quantities with
>> different units. Furthermore, I have an unequally spaced 9-dimensional
>> reference grid and all i have to do is to compute which grid point is closest
>> to my data point with respect to all 9 dimensions.
>>
>> I have to do this several billion times, so I really want to make sure to do
>> it as fast as possible.
>>
>> Any help with that?
>>
>> cheers
>
> Is your grid separable? That is, does the x-coordinate of
> each grid point depend only on x? If it does, you can find
> the index of each nearest neighbor independently of the others.
>
> If your grids are regular, you should be able to compute the
> nearest neighbor index. Something like this
>
> i = ROUND(nx*(x - xmin)/(xmax - xmin))
>
> If your grids are not regular (not evenly spaced), use
> VALUE_LOCATE to do a binary search.
>
> If your grids are not separable, you have a much more difficult
> problem.
>
> Ken Bowman

Hi

Thanks a lot! My grid is unequally spaced but separable and I think VALUE_LOCATE was just the thing i have been looking for.

You saved my day (or better: week)

cheers