Subject: Re: Assign data point to n-Dimensional grid
Posted by Craig Markwardt on Fri, 22 Jun 2012 17:49:21 GMT
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On Friday, June 22, 2012 12:06:15 PM UTC-4, (unknown) wrote:
> Now I find that it is not exactly what I'm looking for
>
> Suppose my grid is [5,1,12] and I want to find to which of these values a data point of 4 is closest to.
>
> So I write
>
> grid = [5,1,12]
> print, VALUE_LOCATE(grid,4)
> 1
>
> But indeed it should be 0 since the 5 in the grid is closer to my data point...
> So in fact I need the nearest neighbor... :(

By the way, your grid has to be strictly ascending. If you pass a randomly ordered grid, expect random results.

VALUE_LOCATE() always finds the next lowest grid point, not the nearest gridpoint.

On the other hand, it's easy enough to check for this.

```
x = your data points
grid = [1, 5, 12]
ii = value_locate(grid, x)  ;; You already know this much

;; See if the ii+1 grid point is closer
;;      _no overflow_      ___ ii+1 sep ___     __ ii sep __
wh = where(ii LT 2    AND (grid[ii+1] - x) LT (x-grid[ii]), ct)

;; If we found some, then use those instead
if ct GT 0 then ii[wh] = ii[wh]+1
```

Craig