Subject: Re: Q: Quantil calculation in IDL?
Posted by James Tappin on Mon, 18 Oct 1999 07:00:00 GMT
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Joerg Mosthaf wrote:
> Hi,
> I have been searching the help files and David Fannings great book, but I can't
> find a way to calculate 25%- and 75%-quantils. Unfortunately I don't know the
> english name for this so let me explain: A 75%-quantil is like the median, but
> with 75% instead of 50% i.e. the number in a data spread, that 75% of all
> data points are less or equal to. Is there a way to do this fast on an
> 256x256 array? I need it to cut off noise at a specific level and to get a
> reliable min/max value, not including data spikes. I am probably overlooking
> something very easy, but I just couldn't find it.

It's not wondrously efficient. But here is a routine that I wrote that will
find arbitrary fractiles of an array (N.B. it takes fractions rather than
percentages). It could be improved by doing a floor and a ceil and
interpolating rather than just a round.

CUT HERE -- fractile .pro
function Fractile, x, frac

```
;+
; FRACTILE
; Return the requested fractile of the input data.
;
; Usage:
; fr = fractile(x, frac)
;
; Return:
; fr <input> The requested fractile.
;
; Arguments:
; x most input The array whose fractile(s) are to be
;    returned
; frac float input The fractile(s) to return.
;
; Restrictions:
; The input data must be a SORTable array (i.e. not complex,
; string or structure).
;
; Example:
; To find the interquartile range of a data set, try:
; q = fractile(data, [.25,.75])
; iqr = q(1)-q(0)
;
; History:
```

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; Original: 26/9/95; SJT
;-

if (n_params() ne 2) then message, 'Incorrect number of arguments'

n = n_elements(x)
i = sort(x)

f = round(frac*n)

return, x(i(f))

end
```