Subject: Re: how to calculate a running total of a vector
Posted by VUKOVIC on Sun, 04 Dec 1994 16:54:55 GMT
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In <CHASE.94Dec2163443@retro.jhuapl.edu> chase@retro.jhuapl.edu writes:

>
> Mirko> Suppose I have a vector v. I want to generate a vector vv
> Mirko> whose i-th element is a sum of the first i elements of v. How
> Mirko> to do it fast -- without loops?
>
>
> This will work, but it is overkill also. I probably does the same
> amount of computations as your matrix multiply solution.
>
> running_sum = (convol([0,v],replicate(1.,n_elements(v)),center=0,/edge_tru n))(1|
> :*)
>
Tried your suggestion, and it works. But it is damn slow compared to a simple
loop algorithm (.4 vs 4 sec for a 1024 length vector on an old vaxstation):

```
FUNCTION RSUMV,V
;+
; Produces a running total of a vector where result(i) is total(v(0:i))
;-

nn=n_elements(v)
res=fltarr(nn)

res(0)=v(0)
for ii=1,nn-1 do res(ii)=res(ii-1)+v(ii)

return,res
end
```

My final thought is to go maybe fia the FFT. One can maybe approximate the sum
by an integral, and do the integration fia FFT.

FFT(FFT(V,-1)/W,1)

where W is a frequency like vector. I may try that later.

Mirko

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