Subject: Re: totalling data with LONG lists of indices
Posted by Jeremy Bailin on Thu, 24 Apr 2008 18:40:47 GMT
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>> In JD's magnificent histogram tutorial, there is a description of how
>> to total data using a separate list of indices (with possible
>> repeats),
>> along with a vague hint that "For large histograms, there are even
>> more
>> efficient ways to do this with very short or no loops (e.g. using a
>> histogram of the histogram)." I have exactly that situation. Because
>> about 90% of my indices are not repeated, I have achieved a decent
>> speed-up using the following code for the "single" cases ("indices",
>> "data", and "hist" are the index list, data list, and final result
>> respectively, and hist is already pre-dimensioned).
>
>> indhist = histogram(indices, omin=om, reverse_indices=indri)
>> dupehist = histogram(indhist, min=1, reverse_indices=duperi)
>> ; unique cases, so we can use them to index the LHS:
>> if dupehist[0] gt 0 then begin
>> just1 = duperi[duperi[0]:duperi[1]-1]
>> hist[just1+om] += data[indri[indri[just1]]]
>> endif
>
>> And going with the brute-force for loop for the rest:
>
>> ; loop through the rest
>> if n_elements(dupehist) gt 1 then begin
>> multiples = duperi[duperi[1]:*]
>> for j=0l,n_elements(multiples)-1 do begin
>> elements = indri[indri[multiples[j]]:indri[multiples[j]+1]-1]
>> hist[multiples[j]+om] += total(data[elements])
>> endfor
>> endif
>
>> However, the loop is still going over hundreds of thousands of entries
>> and I can't help but suspect that another histogram and some fancy
>> footing with the i-vector would get rid of it. Does anyone have any
>> suggestions? Thanks.
>
> I had to do something like this and found this page to be very handy:
>
> http://www.dfanning.com/code_tips/drizzling.html

Ah, yes, that would do it! I replaced my second for loop with JD's in
the dual histogram implementation, and it's now suitably fast. :-)=
Thanks!

David: if you could link the Drizzling page into the Histogram page at that "histogram of a histogram" hint, that would be awesome...

-Jeremy.
