Subject: Re: multiplication by a diagonal matrix
Posted by Paolo Grigis on Fri, 03 Sep 2004 12:32:11 GMT
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Lorenzo Busetto wrote:
> Hi all,
>
> I have the following problem: given a matrix A(n,m) and a vector of
> weighting factors w(n), i need to multiply each row of the matrix
> A(i,*)by the corresponding weighting factor w(i).
>
> I know that I can simply "transform" the w vector into a diagonal
> matrix with diag_matrix and then multiply it with A (e.g.: result =
> A##diag_matrix(w)), but for large values of n this solution is very
> slow.
>
> Can anybody suggest me a faster approach to solve this problem ?
>
> Thanks in advance for the help,
>
> Lorenzo Busetto
>
> Remote Sensing Lab.
> University of Milano-Bicocca.

You could try (if you *really* want to avoid a FOR loop over the rows):

```
N=n_elements(w)
ahelp=replicate(1d,N)##w
res=a*ahelp
```

In the second line, * is much faster than ##, and the first
line is just a 1 by N matrix multiplication, faster than the
N by N you used.

Ciao,
Paolo