Subject: Matrix multiplication again...
Posted by on Mon, 07 May 2012 15:40:49 GMT
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Suppose I have an image (let's say 128x128=16384 pixels) and for each pixel there is a vector with maybe 100 (could be more) elements. I organize this as a variable x with 16384 by 100 elements.

Suppose I also have a 100x100 matrix M (or in general not symmetric but nevermind) and I want to calculate y, which is then also a 16384 by 100 array where

```
y[i,*] = M ## x[i,*]
```

for all i.

Clearly I can do this by looping over i and performing the calculation one pixel at a time. But this must be really inefficient so maybe somebody has written a subroutine that does this "the IDL way"? For a small matrix M I can imagine looping over the matrix elements and adding matrix elements "one image at a time"? But if the matrix dimensions are comparable to (or even larger than!) the image dimensions it is not clear to me that it would be any faster.

Suggestions?