Subject: Re: IDL2MATLAB
Posted by Liam E. Gumley on Wed, 27 Feb 2002 22:43:51 GMT
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Nigel Wade wrote:
> Liam E. Gumley wrote:
>
>> Ethan wrote:
>>>
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>>
>> A complicating factor is that in IDL, arrays are stored in column-major
>> order (the same as FORTRAN), while in Matlab, arrays are stored in
>> row-major order (the same as C).
>
> Substitute IDL for MATLAB. In IDL they are the same as in C. I can never
> remember which is column-major or row-major, but I know that using MATLAB
> multi-dimension matrices in C mex files is a real pain because of the array
> indexing difference.

I'll stick by my original comments, which referred to *arrays* only (not matrices). In IDL and FORTRAN, an array with dimensions [m cols, n rows] is stored contiguously in memory as

(col 1, row 1), (col 2, row 1), (col 3, row 1), ... (col m, row 1),
(col 1, row 2), (col 2, row 2), (col 3, row 2), ... (col m, row 2),
(col 1, row 3), (col 2, row 3), (col 3, row 3), ... (col m, row 3),
.
.
.
(col 1, row n), (col 2, row n), (col 3, row n), ... (col m, row n)

The term "column-major" is used because the column index varies the fastest when accessing contiguous elements of a multi-dimensional array in memory.

Cheers,
Liam.
Practical IDL Programming
http://www.gumley.com/