

Re: Problems with CLAPACK SVD routines on OS X

Source: <http://sci.tech-archive.net/Archive/sci.math.num-analysis/2007-08/msg00061.html>

- *From:* "H.S." <hs.saDELETEmix@xxxxxxxxxx>
 - *Date:* Wed, 08 Aug 2007 15:03:07 -0400
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Robert V. wrote:

Hello,

I apologize if these questions have been addressed before, but I am new to both C++ and LAPACK.

I am trying to write a program to calculate the SVD of a term-document matrix. Since I have no experience with Fortran, I thought it best to do this in C/C++. I am doing my development on an Intel Mac running OS X 10.4.10.

I am able to get results using Lapack's dgesvd routine, but only when

Great! So your libraries and routine calls are working properly.

The following program is based on the sample above, but it differs in that I have to allocate my arrays dynamically. Unfortunately, I can't seem to get it to run without seg faulting during the call to dgesvd:

```
####  
#include <vecLib/vecLib.h>
```

I am not familiar with this header file. What does it do and why do you need it?

I wanted to run this code of yours (I have lapack libraries installed on my Linux system) but I do not have a data file that you are trying to read. But I couldn't get the program compiled

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```
g++ svd_test.cpp -I/usr/local/include -framework vecLib -o svd
```

... If I try to compile your program, I get (after excluding fstream and sstream headers):

```
$> g++ testsvn.cc ~/lib/lapack_LINUX.a -I~/include/ -o testsvd
testsvn.cc:1:27: error: vecLib/vecLib.h: No such file or directory
testsvn.cc: In function int main(int, char**) :
testsvn.cc:27: error: variable std::ifstream infile has initializer
but incomplete type
testsvn.cc:46: error: variable std::istringstream s has initializer
but incomplete type
testsvn.cc:85: error: variable std::istringstream s has initializer
but incomplete type
testsvn.cc:91: error: statement cannot resolve address of overloaded
function
testsvn.cc:122: error: dgesvd_ was not declared in this scope
```

So, doesn't your g++ compiler not give any warnings or errors at all?
Try with the "-Wall" switch.

Next, can you send us an example data file you are trying out? You don't need a huge matrix, try with a much smaller one (would help in debugging).

So let us what warnings you get from your compiler and send an example data file as well and then I will try again.

regards,
->HS

```
./svd small.matrix
Opening small.matrix
Initializing a 5 x 15513 matrix
Finished initializing...
Initializing LWORK...
Calculating SVD...
Segmentation fault
```

I suspect that my problem stems from my confusion about row-major vs column-major matrices, but this is a shot in the dark. Any insight would be greatly appreciated.

Thanks!

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Robert