
Subject: Re: Eigen and UPP? (STL question?)
Posted by [dolik.rce](#) on Fri, 13 May 2011 14:41:10 GMT
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GaroRobe wrote on Fri, 13 May 2011 13:18It worked, but... hey, what did it do?

I mean... what does "NAMESPACE_UPP" means and why can't I define similar template for `std::stringstream&` instead of `MatrixXd&`? Well "NAMESPACE_UPP ... END_UPP_NAMESPACE" is just a fancy way to say "namespace Upp { ... }", it uses macro to allow compiling everything without namespace, when flag NONAMESPACE is used. Here it is necessary because `AsString` is templated function defined originally in Upp namespace.

Now what did it do Everything in Eigen uses this operator (defined in `Core/IO.h` in Eigen sources):
`template<typename Derived>`

`std::ostream & operator <<`

`(std::ostream & s,`

`const DenseBase<Derived> & m)`

`{`

`return internal::print_matrix(s, m.eval(), EIGEN_DEFAULT_IO_FORMAT);`

`}As you can see it uses std::ostream (and print_matrix() as well) which is not compatible with U++ streams. So we used this operator to output the matrix into stringstream (which inherits from ostream), then convert it to std::string by calling str() method and this string is then converted to Upp::String (using implicit conversion in the return statement). Now the whole machinery that lies behind the U++ operator<< can use the AsString specialization to convert the matrix to Upp::String, which can be used in the Cout << ... expression. I'm not sure if this is understandable, but looking at operator<<() definition (at Core/Stream.h:650) might help`

I'm 90% sure there is a better solution, I just didn't have time to investigate Eigen deep enough. I am quite interested in having nice algebra toolkit such as eigen available in U++. It would be great if you could make a package that would provide some of the basic functionality needed to better integrate eigen into U++, such as this << operator etc... Of course, I'll offer you help and advice on this

GaroRobe wrote on Fri, 13 May 2011 13:18Well, anyway I'll have to do some serious learning on strings, values and containers in U++ (reading once obviously just wasn't enough)

Seems like I'll have quite a number of questions along the way Some parts of the U++ docs have to be read 10+ times to be fully understood It might sound discouraging, but this forum's members are very helpful and ready to answer the questions

Honza

EDIT: I see mr_ped once again answered faster than me... Thankfully, his answer is basically the same as mine
