Subject: New package ArrayFire_demo
Posted by koldo on Wed, 30 Dec 2015 17:20:37 GMT
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ArrayFire_demo package includes simple ArrayFire benchmarks and demos.

ArrayFire is a library for fast GPU computing, supporting both Nvidia CUDA and OpenCL devices, and it is open source (BSD 3-clause).

It includes matrix algebra, algorithms, image processing, etc. classes and functions.

You can download ArrayFire sources from GitHub or the binaries from the ArrayFire page. Install is very easy, although in few days I will include instructions.

Benchmarks and demos included in package are:
- Pi: Pi number benchmark
- Matrix: NxN matrix product benchmark
- Vectorize: Different strategies to do operations between vectors
- Demo: Basic matrix algebra demos

For example in my poor Nvidia card, Pi demo works 30 times faster in GPU than in CPU.

Subject: Re: New package ArrayFire_demo
Posted by Didier on Wed, 30 Dec 2015 20:18:51 GMT
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This is very interesting,

Thanks

Subject: Re: New package ArrayFire_demo
Posted by koldo on Wed, 30 Dec 2015 21:14:48 GMT
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An advantage of ArrayFire is that it is very easy to install and it uses internally cl/cuBLAS, cl/cuFFT, MKL, OpenMP and other basic accelerated libraries, transparently for the programmer.

If you want to try GPU computing the easy way, ArrayFire is a good option. If anybody else has interest in using directly basic CUDA or OpenCL I can upload some demo, although the difference in usability is abyssal :).

Subject: Re: New package ArrayFire_demo

Posted by koldo on Wed, 06 Jan 2016 20:51:35 GMT
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Added matrix product benchmark.

In this case the GPU (a very basic 100 cores NVidia) is up yo 600 times faster (about 120 GFlops) than the CPU with the naive algorithm.

The trick is that it uses cuBLAS library.

This benchmark used a 2880 cores high end Tesla K40M and gets until 1200 GFlops, so with some money there is space for improvement :) .

File Attachments

1) capt.JPG, downloaded 628 times