GPU Computing Workshop
CSU 2013

Higher level APIs and sample applications

Garland Durham
Quantos Analytics

Matlab

- See http://www.mathworks.com/help/distcomp for Matlab Parallel Computing Toolbox documentation.
- See `code/simpleMatlab` for a simple example.
- See also `code/optionPricing` for a slightly more elaborate example.

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Thrust

- The Thrust library is installed by default with the CUDA Toolkit.
- Using thrust is similar to working with the C++ standard template library.
- See http://code.google.com/p/thrust/wiki/QuickStartGuide for Thrust library documentation.
- Examples: https://github.com/thrust/thrust/tree/master/examples
- See also example in `code/simpleThrust`.

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Accelereyes Arrayfire

- See http://www.accelereyes.com/arrayfire/c/ for documentation.
- See /usr/local/arrayfire/examples for examples.
- See also example in code/simpleArrayfire.

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Python

Documentation and samples:

- Python: www.python.org
- SciPy: www.scipy.org
- PyCUDA: mathema.tician.de/software/pycuda

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Sequential Monte Carlo

- "Adaptive Sequential Posterior Simulators for Massively Parallel Computing Environments" (with John Geweke), www.quantosanalytics.org/garland/gpu2.pdf.

- MP-SPS (Massively Parallel Sequential Posterior Simulator) Software, www.quantosanalytics.org/garland/mp-sps_1.1.zip.

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Option pricing

See `code/optionPricing`.

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Particle filter

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Parallel MCMC

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Multiperiod forecasting

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