Performance Analysis and Optimization of Individualised CPU-GPU Core Systems

Project Definition:

To provide a detailed report on the capabilities of modern NVIDIA CUDA based Graphics architecture ranging from low level (GeForce 525M) to high level models (Tesla C2050).

Goals:

- Provide sufficient data enabling us to reflect upon the advancement in NVIDIA GPUs over the years.
- Inspect the scheduling and synchronizing capabilities of the processors.
- Detect sources of bottlenecks.
- Provide a scope of improvement in the above mentioned areas.

Hardware Requirements:

NVIDIA Tesla C2050, Geforce GT 650M, 630M, 525M.

Software/Tools:

- Fedora OS, Windows OS
- gcc/g++, OpenGl, Shell Scripting
- Perf/Sysperf, IOStat
- Open Source Benchmarking Tools
- Open Source Video Rendering Tools
- GNU Plot

References:

- http://gpgpu.org/static/s2007/slides/08-performance-overview.pdf
- http://www.opengl.org/sdk/docs/tutorials
- http://www.luxrender.net/wiki/LuxMark

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