Section 1.2.2: Resources for GPU Module

In this module, student will learn about GPU architecture and how to program GPUs. The activities for this module involves going over the instructional material and seven lab exercises and programming assignment to help students learn about programming GPUs. All programming exercises will be done using CUDA programming environment. It is assumed students are familiar with C/C++ programming language.

Instruction materials:

1. Watch the GPU Module Overview video.
2. For an overview of GPU architecture , please read the following document:

<http://www.nvidia.com/content/pdf/fermi_white_papers/nvidia_fermi_compute_architecture_whitepaper.pdf>

1. For getting started with CUDA programming environment, please read the following:

Chapter 1,2, part of Chapter 3 (3.1, 3.2.1, 3.2.2, 3.2.3), and Chapter 4 of the following document: <http://docs.nvidia.com/cuda/pdf/CUDA_C_Programming_Guide.pdf>

Also, go over the following presentation: http://developer.download.nvidia.com/compute/developertrainingmaterials/presentations/cuda\_language/Introduction\_to\_CUDA\_C.pptx

1. To learn how to efficiently program GPU, please go over the following material that covers two example applications: Scan and Sort. <http://developer.download.nvidia.com/compute/developertrainingmaterials/presentations/parallel_programming/martel-reduce-scan-sort.ppt>
2. For general reading how GPUs are being used by machine learning community, please watch the video:

Deep Learning: What’s Next – Andrew Ng (Baidu): <http://on-demand.gputechconf.com/gtc/2015/presentation/S5818-Keynote-Andrew-Ng.pdf> Watch the video at: http://www.ustream.tv/recorded/60113824