University of Nevada, Reno

CS 791v: Topics: Parallel Computing
Spring 2018

Programming Assignment 3
Matrix Multiplication

Assigned Date
2/6/2018

Due Date
2/13/2015

Overview

- Task: Fill missing values in a table (2D array)
- What should be done:
  - Dynamic table: at least 100 rows and 100 columns, 10% of the rows have one missing value
  - To simplify the problem: missing values always in the second column (first column is ID) and K = 5
  - Summation reduction and unified memory are required
  - Include checks for invalid input, Chapter 3.3 cuda by example book
    - *Check if allocate threads and blocks more than maximum*
  - Timing -- Add statements to time the execution of the code using CUDA events or nvprof, both for the host-only (CPU) computation and with the device (GPU) computation, and display results.
  - Compute and graph the appropriate metrics (runtime, speed-up factor, throughput…).

Deliverables

- Two parts:
  - Report:
    - Results: multiple timings of runs of various sizes
    - Appropriate graphs
  - Code ONLY GITHUB, don't use any library:
    - Sequential C part

        - Cuda part
        - Same repository and output comparing results
- Have a pdf of your report emailed to Fred Harris, Lee Barford, and Rui Wu.