

University of Nevada, Reno

CS 791v: Topics: Parallel Computing Spring 2013

## Programming Assignment 2 Mandelbrot Set

Assigned Date 2/6/2013

**Due Date** 2/11/2013

## Overview

- You will write a program to calculate and output Mandelbrot Sets.
- There is a great tutorial and intro (with most of the sequential code) at the following website: <a href="http://warp.povusers.org/Mandelbrot/">http://warp.povusers.org/Mandelbrot/</a>
- To write the image you may use whatever tool you like. Some example library such as png++ would be good, or you may write out a simple ppm file. A description of the text required for a ppm file and sample ppm files can be found here: <u>http://netpbm.sourceforge.net/doc/ppm.html</u>

## Project Requirements

- 2 versions of the code:
  - A compiled and running sequential C program
  - A compiled and running CUDA program
- Multiple timings of runs.
- Appropriate graphs
- Larger Images and a larger MaxIterations will make the run time increase.
  - Use 2,000 x 2,000 pixels for your image with 1024 iterations for your graphs.

## Deliverables

- Bring code and output to class for discussion next Monday.
- Best verifiable performance in class on Monday gets bonus points.
  - Optimize, and find best block size, thread count, and strides...
- Have a pdf of your writeup and a zip of your source code emailed to Fred Harris and Lee Barford (DO NOT send binaries).
  - Firstname dot Lastname at ... (Fred is cse, Lee is gmail)