ECE 459: Programming for Performance
Assignment 4

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Archive URL
http://ece459.eyolfson.com/media/assignments/provided-assignment-04.tar.gz

Important Notes

- Make sure your working directory is called "assignment-04"

- Please **do not** work on `ece459-1` (for your own good), from experience last year, it will crash a lot (probably best to push your private git repository there)

- Make sure you run your program on `ece459-1.uwaterloo.ca`

Background

Lectures 25 and 26 contain background information for OpenCL. The problem itself is the n-body simulation. You can see the problem, and part of the sequential solution here: `http://http.developer.nvidia.com/GPUGems3/gpugems3_ch31.html`. We're only going to be concerned about converting the brute-force solution to OpenCL. Although approximation algorithms are important, so you should check it out.

Report

Converting to OpenCL

You will take the `nbody-seq.c` file and write an OpenCL version of it. There is a basic outline for setting up the platform/context.

Benchmark the sequential solution (using `time`). Then compare that to your OpenCL version. Again, run the program around 6 times to make sure your results are correct. We will evaluate the correct and efficiency of your conversion.