ECE 6397 – GPU Programming
Final Project
Rubric

Name__________________________

Project Selected by Deadline

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CPU implementation
I expect a complete and functioning CPU implementation of your project. This should be the first thing that you do in order to test the accuracy of your code. Thoroughly test your application to make sure that it is working correctly. CPU code is much easier to debug, so take full advantage of debugging tools during this phase of your project.

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GPU implementation
Convert at least three major sections of your code into GPU-based kernels. These kernels should each perform a unique function and should be reasonably complex (on par with a programming project). The data parallelism and speedup should justify moving the code to the GPU.

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Profiling Quality
Thoroughly profile your code. Understand your constraints and bottlenecks. Justify how and why your device code should be run on the device, providing expected and achieved speed comparisons.

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comments (I expect about 1-2 lines per line of code)
(also note that comments help me understand your thought process, making it easier to give better scores on implementation and efficiency)

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Slide Deck
Create a short (5-7 slide) presentation describing your proposed algorithm. Spend one slide on each kernel, describing the algorithm and how it was parallelized.

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Written Report
Your written report (≈ 5 – 10 pages) should describe your algorithm and show some results. Make a section for each kernel: (1) describe the non-parallel implementation, (2) describe how you parallelized it, (3) provide profiling results, and (3) highlight problems or challenges that you encountered. For example, if a large fraction of your speedup was achieved using shared memory, profile both global and shared memory use to demonstrate the advantage.

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