# CS398 Assignment 1 report

## Analysis of CPU vs GPU usage

The below figure shows a bar graph plotting time taken for 50 iterations and speedup from CPU to GPU. The data table is included as certain values are unable to be seen due to the difference in values. The speedup section is also included to be discussed later.

Figure 1. Bar graph plotting time taken for 50 iterations and speedup from CPU to GPU.

As seen from the above figure, the GPU computations starts having a positive speed up of 56% after 500 elements with 50 iterations. This hence shows that the GPU usage is more beneficial at 500 elements as that is the first number of elements which the performance increases.

The lowest speedup as seen from the figure is at 100 elements. This is due to the bottleneck caused by GPU processors instruction latency. As seen from the other iterations, the n elements does not affect the GPU’s speed as much as it does for CPU. Therefore, the 100 elements does not make use of the GPU as well as the other elements and CPU is more efficient than GPU.