

HW4

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April 2020

1 Matrix-vector operations on a GPU

I did not test with very large N (2^{15}), since the naive nature of my implementation ran into memory limitations in the GPU with larger N . As a result of the naive implementation the GPU performance should also be able to be improved.

Bandwidths:

GPU and Bandwidth (GB/s)	CPU	GPU
NVIDIA GeForce GTX 980 Ti	21.05	13.53

2 2D Jacobi method on a GPU

See jacobi2D-omp.cu.

3 Update on final projection

So far I have only done some preliminary research to get my self familiarized on the tasks I need to know for the project. I reviewed the naive k-means algorithm, and looked up some ideas for initialization. So far a small concern is learning how to import data into c++ and convert it into something usable, and also where I would look for large data sets. However this is just something I am unfamiliar with and should be easy to resolve.