

Assignment 4: Programming Productivity

- Assignment Group 3
- Giovanni Prete and Max Harrison

Both had equal contributions.

Question 1 - 1D Convolution

Question 2 - NVIDIA Libraries and Managed Memory

1)

Run the program with different dimX values. For each one, explain how you can approximate the FLOPS (floating-point operation per second) achieved in computing the SMPV (sparse matrix multiplication). Report FLOPS achieved by your code at different input sizes.

2)

Run the program with dimX=1024 and vary nsteps from 100 to 10000. Plot the relative error of the approximation at different nstep. Describe and explain your observations?

3)

Compare the performance with and without the prefetching in Unified Memory. How is the performance impact? [Optional: using nvprof or ncu to get UM related metrics]