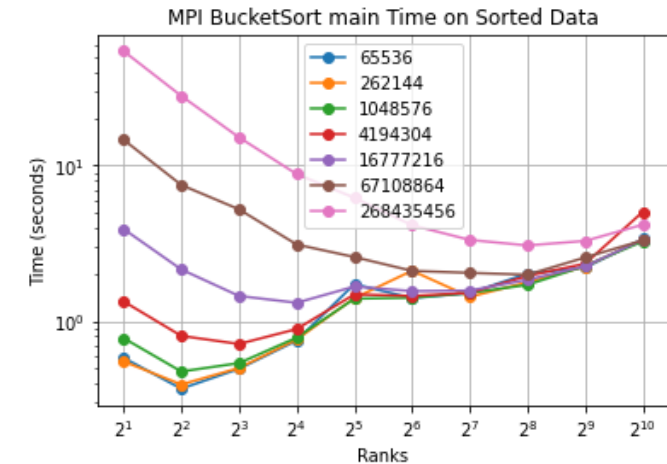
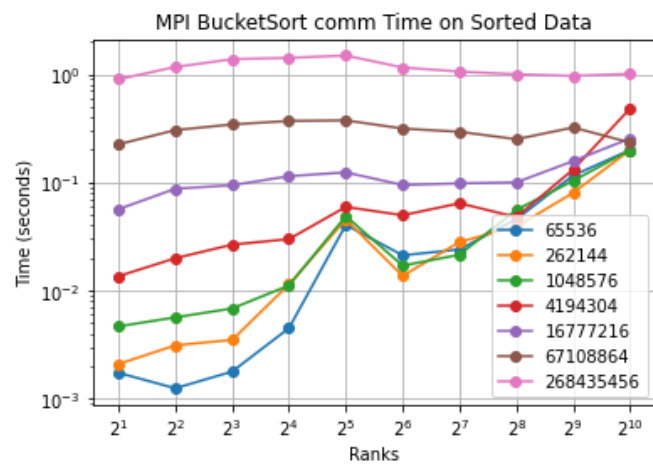
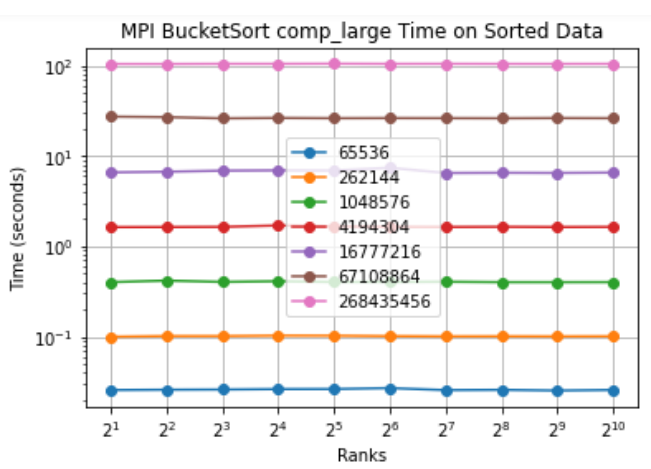
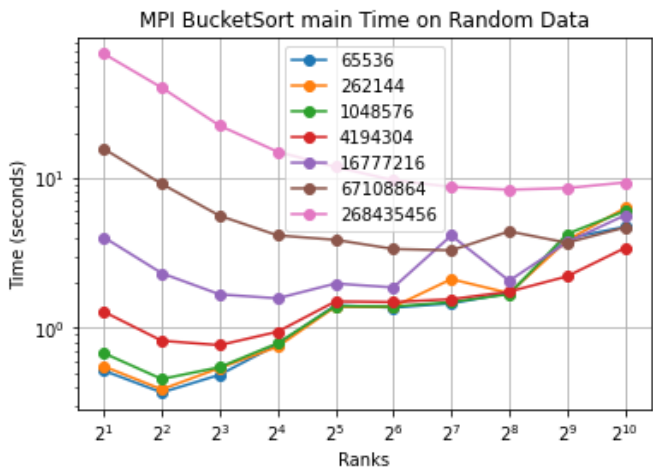
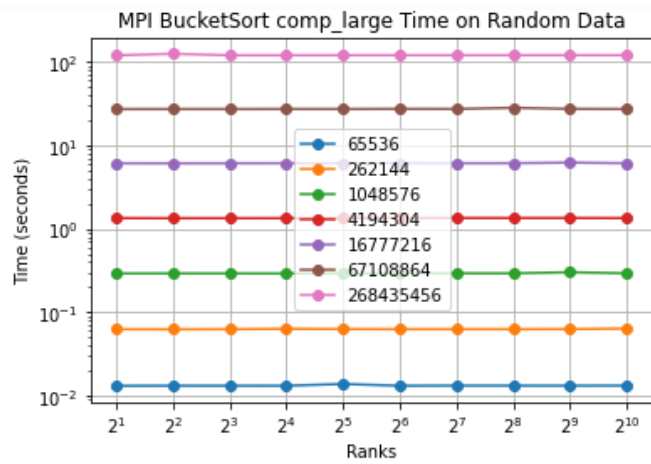
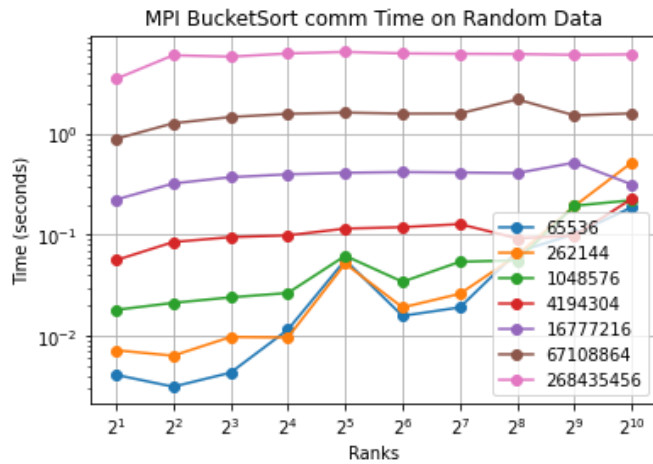
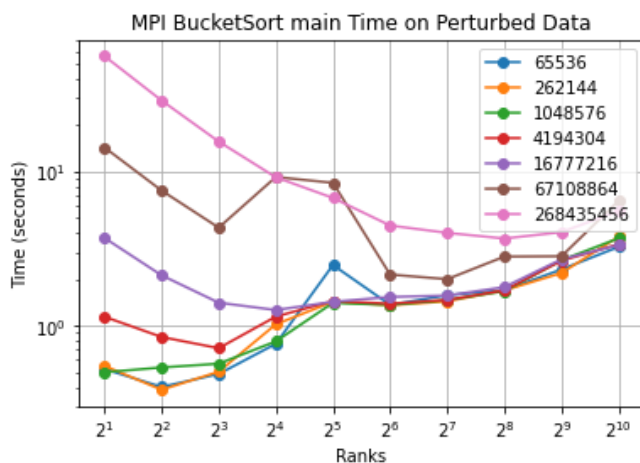
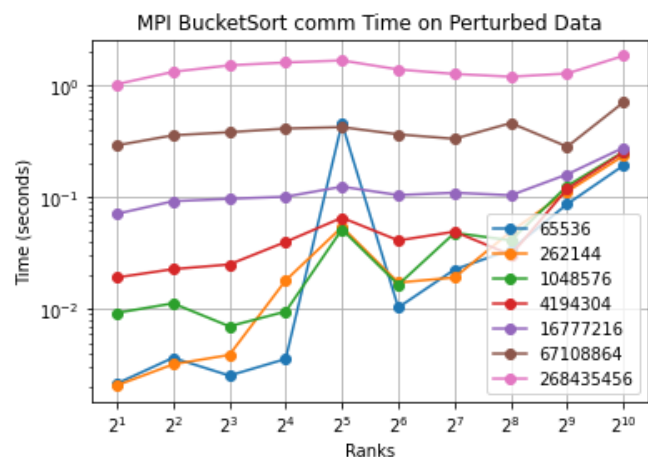
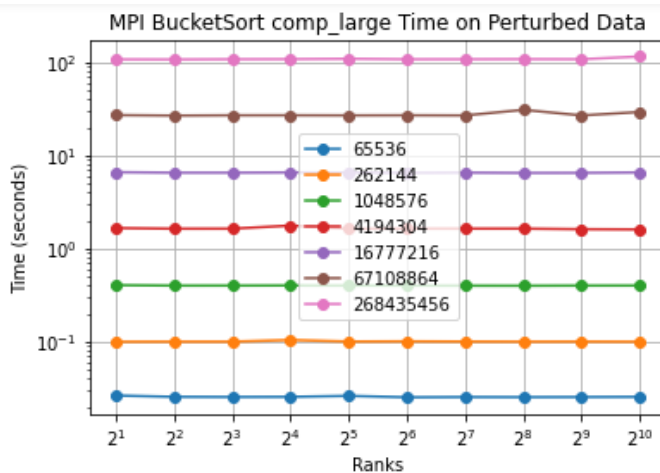
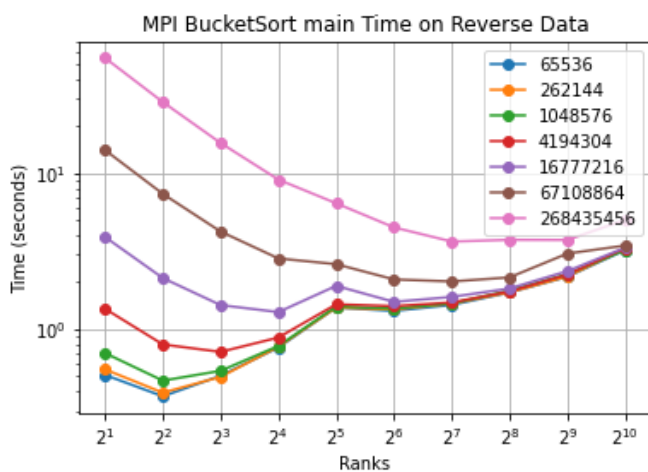
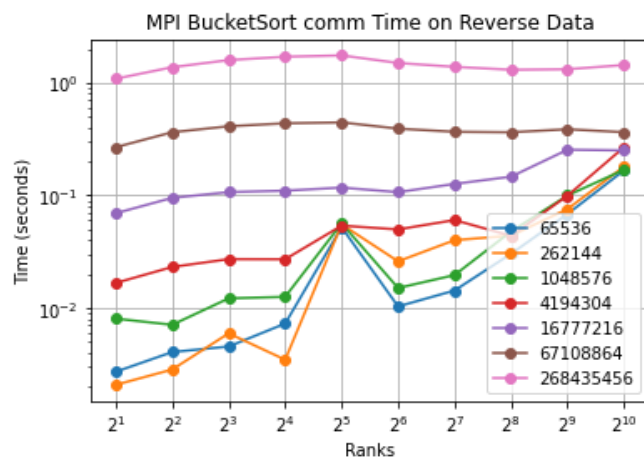
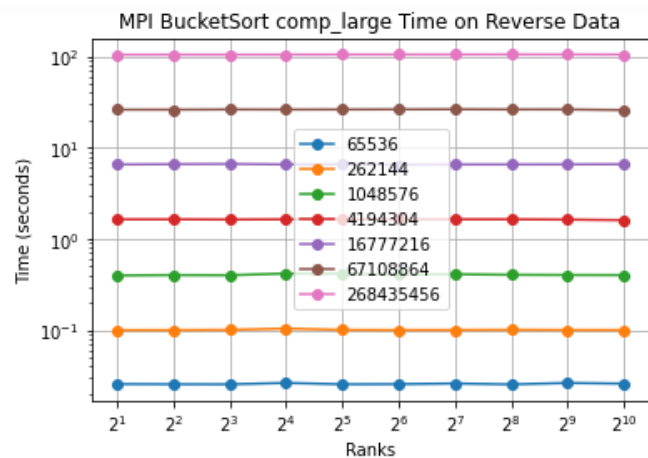


# Bucket Sort Graphs

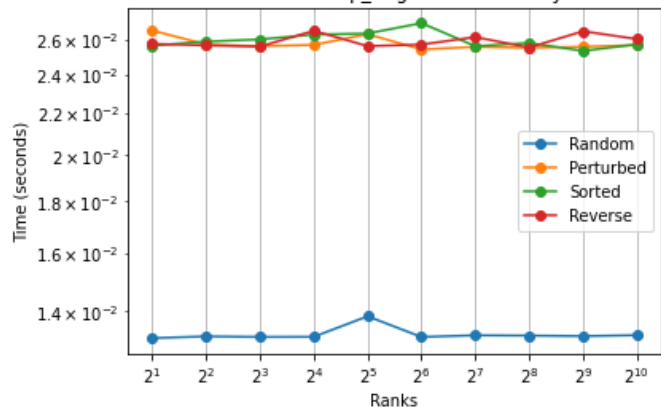
## MPI Implementation (Weak Scaling):



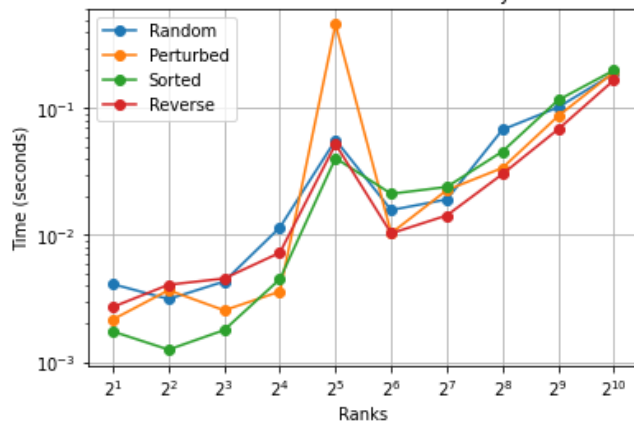


**MPI Implementation (Strong Scaling):**

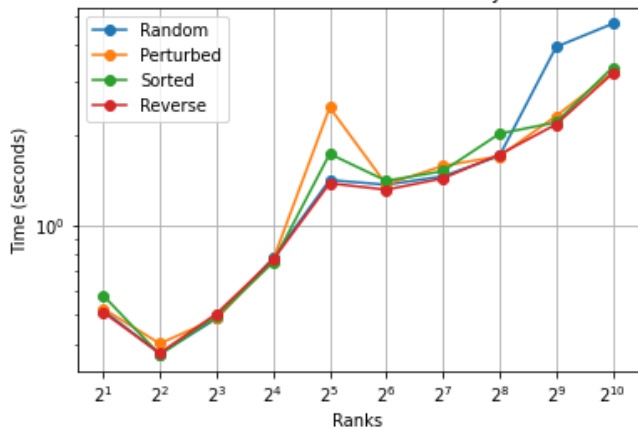
MPI BucketSort Sort comp\_large Time for Array Size 65536



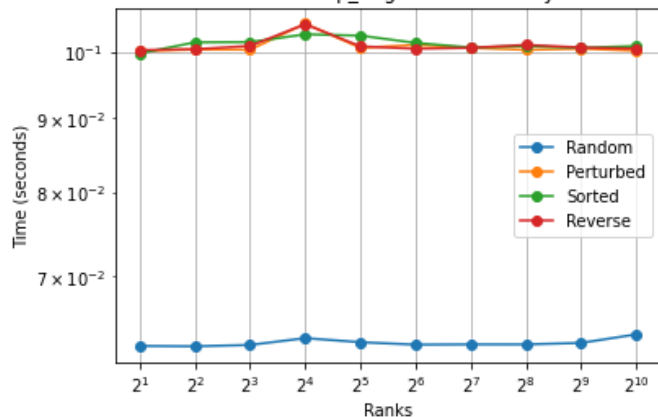
MPI BucketSort Sort comm Time for Array Size 65536



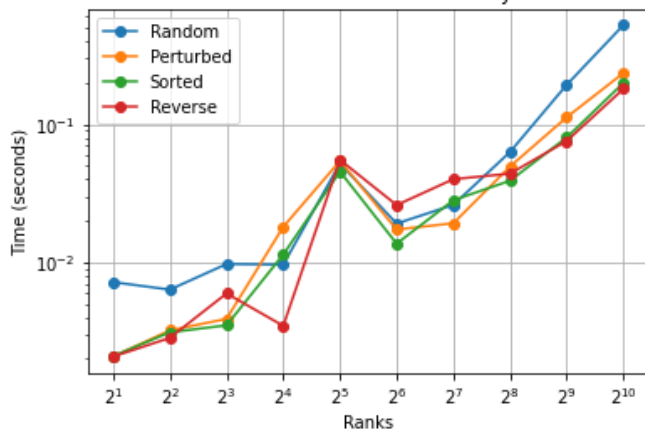
MPI BucketSort Sort main Time for Array Size 65536



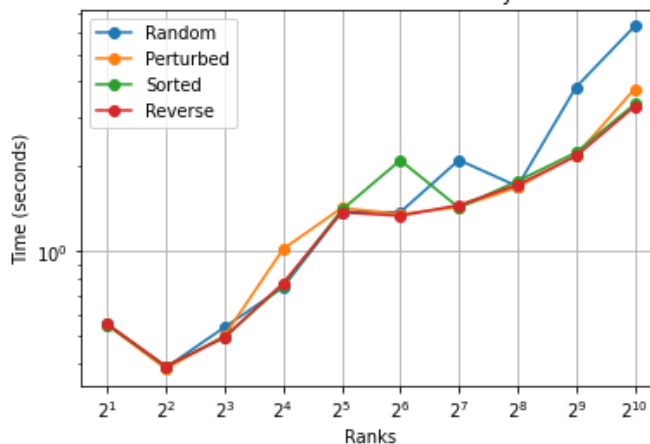
MPI BucketSort Sort comp\_large Time for Array Size 262144



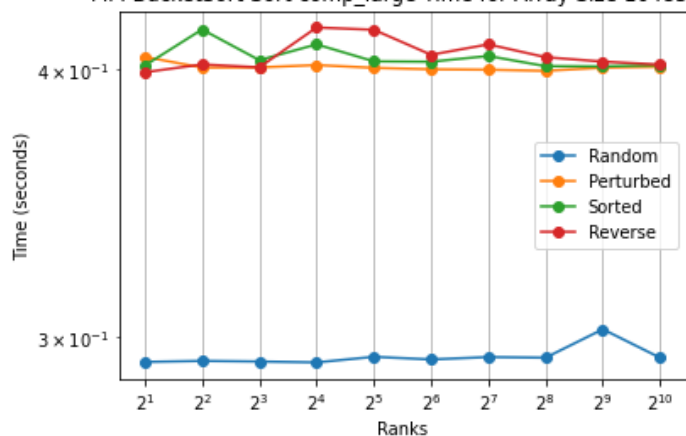
MPI BucketSort Sort comm Time for Array Size 262144



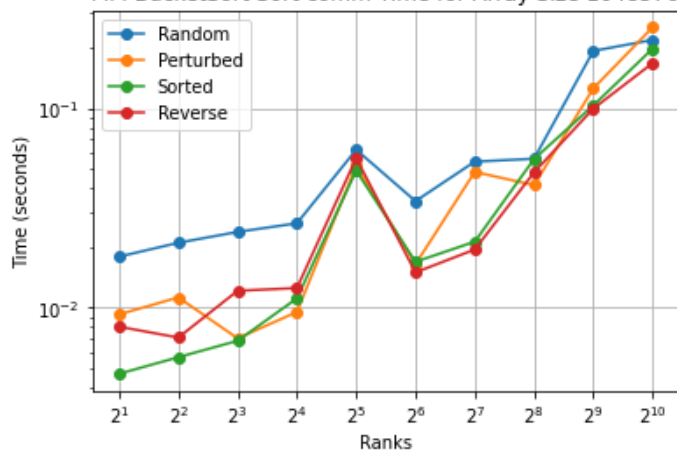
MPI BucketSort Sort main Time for Array Size 262144



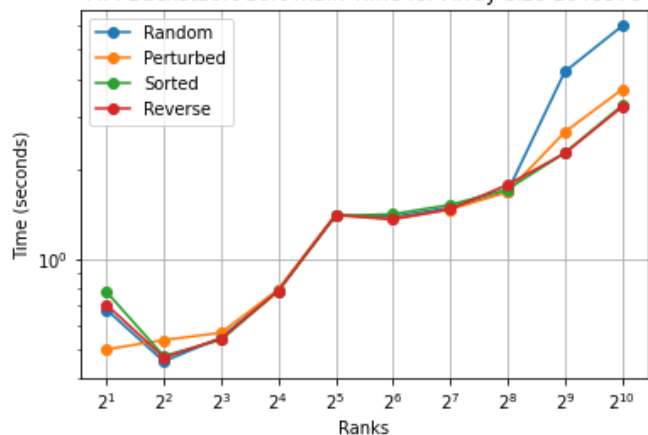
MPI BucketSort Sort comp\_large Time for Array Size 1048576



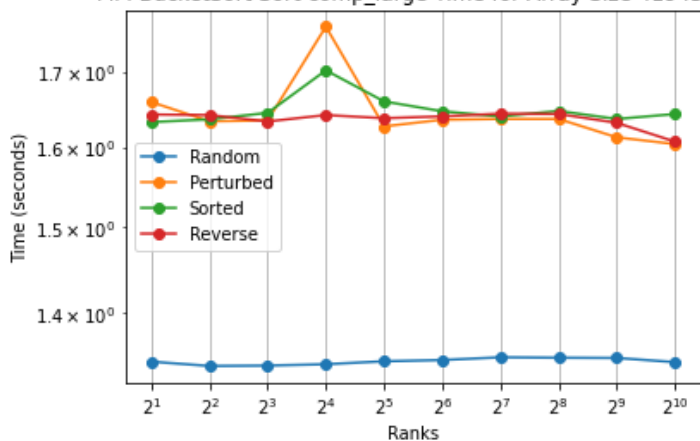
MPI BucketSort Sort comm Time for Array Size 1048576



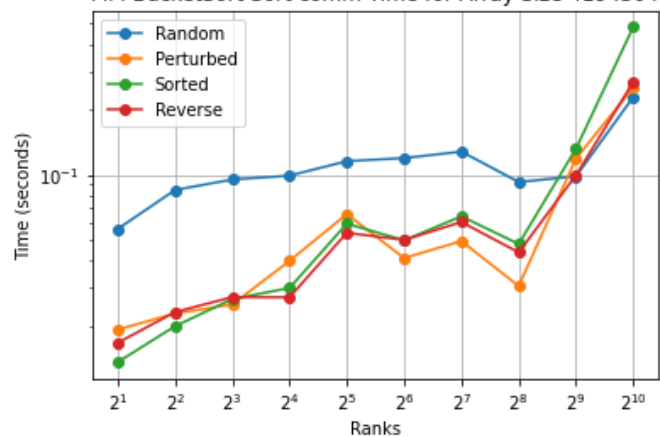
MPI BucketSort Sort main Time for Array Size 1048576



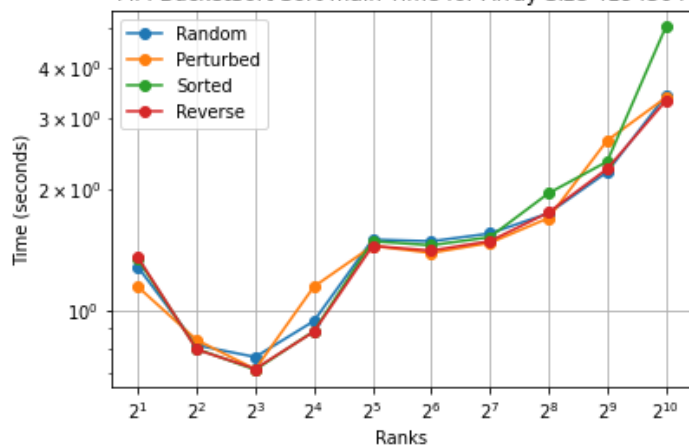
MPI BucketSort Sort comp\_large Time for Array Size 4194304



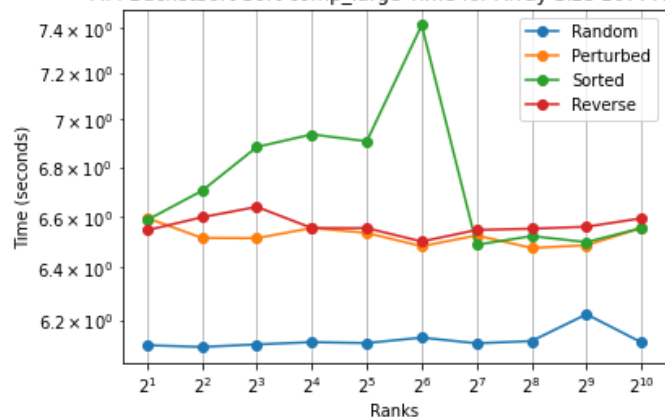
MPI BucketSort Sort comm Time for Array Size 4194304



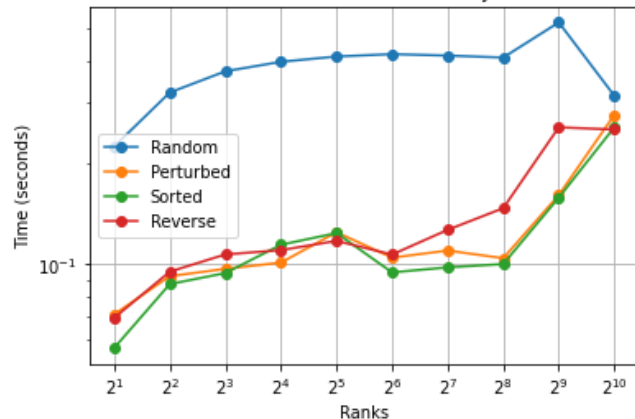
MPI BucketSort Sort main Time for Array Size 4194304



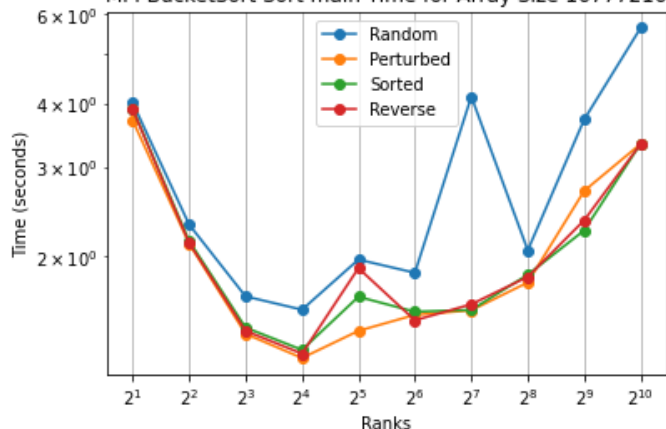
MPI BucketSort Sort comp\_large Time for Array Size 16777216



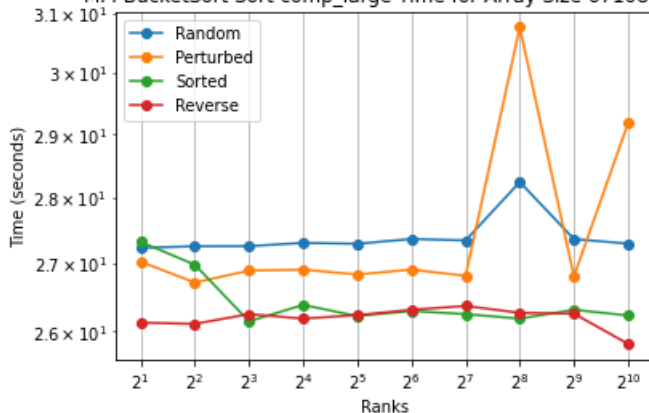
MPI BucketSort Sort comm Time for Array Size 16777216



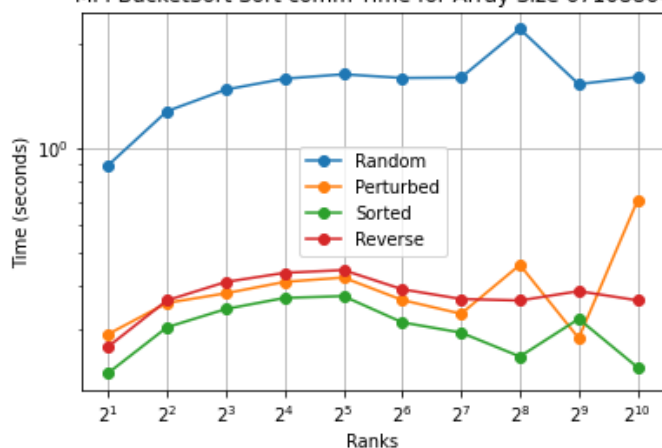
MPI BucketSort Sort main Time for Array Size 16777216



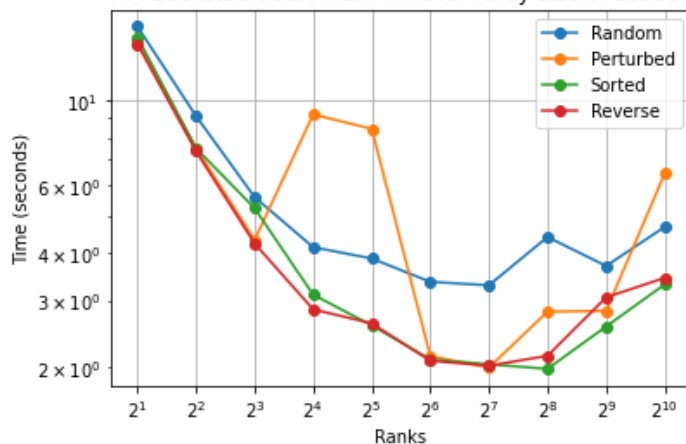
MPI BucketSort Sort comp\_large Time for Array Size 67108864



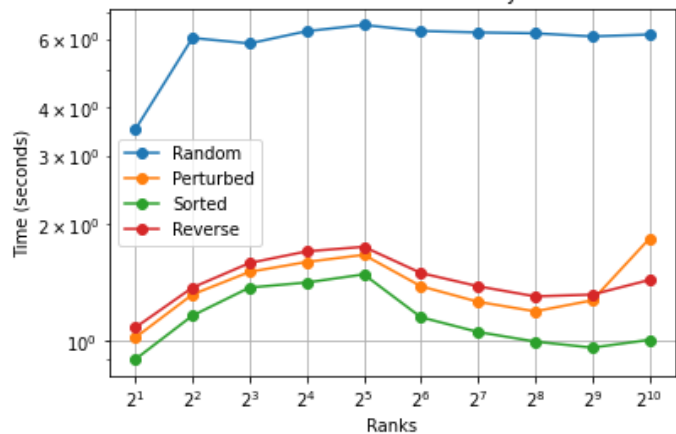
MPI BucketSort Sort comm Time for Array Size 67108864



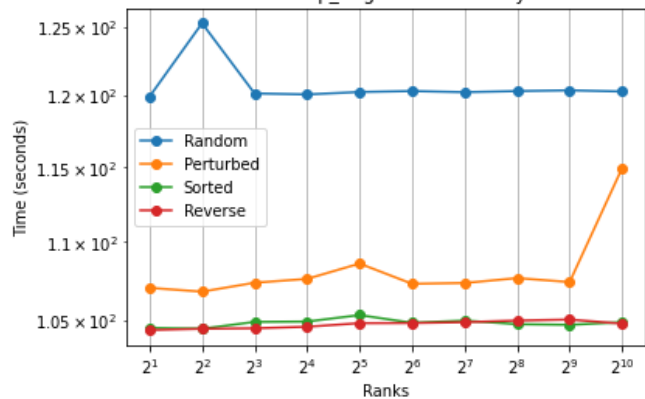
MPI BucketSort Sort main Time for Array Size 67108864



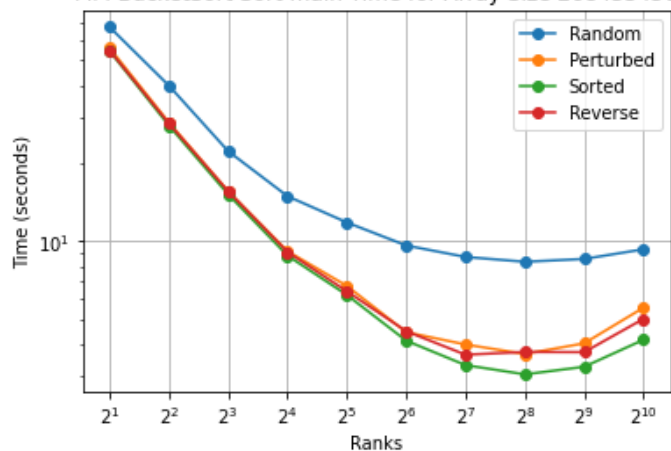
MPI BucketSort Sort comm Time for Array Size 268435456



MPI BucketSort Sort comp\_large Time for Array Size 268435456

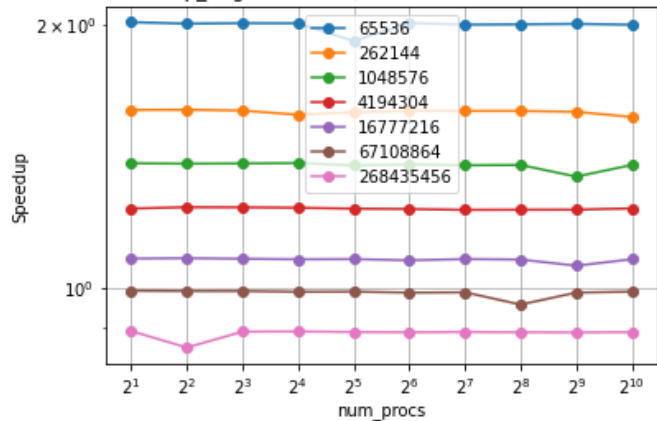


MPI BucketSort Sort main Time for Array Size 268435456

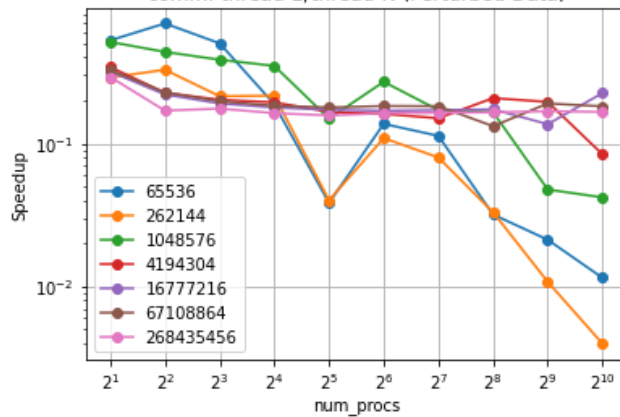


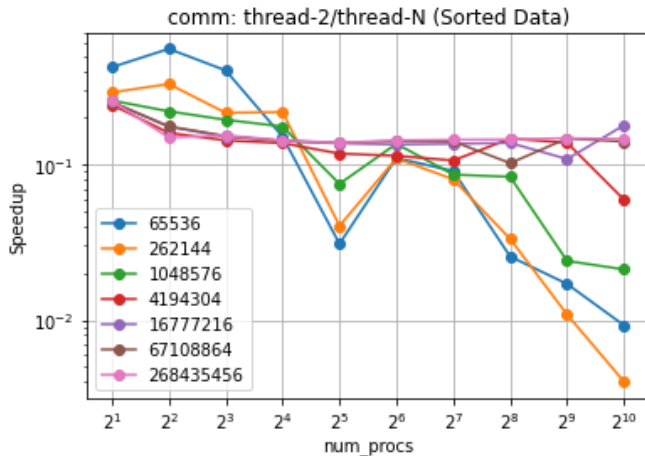
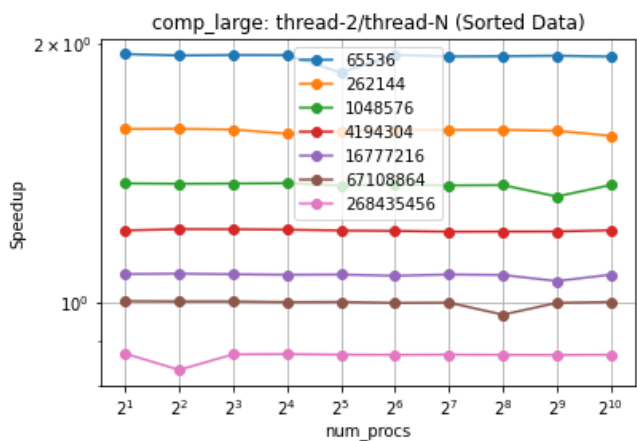
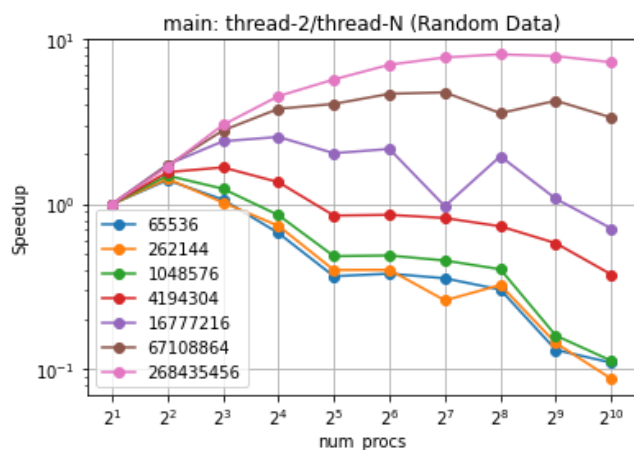
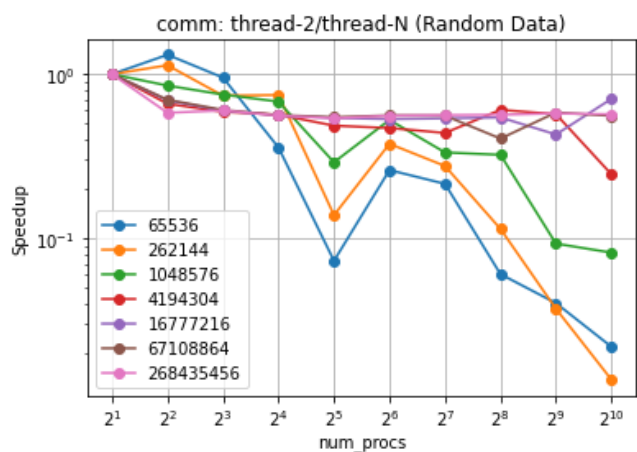
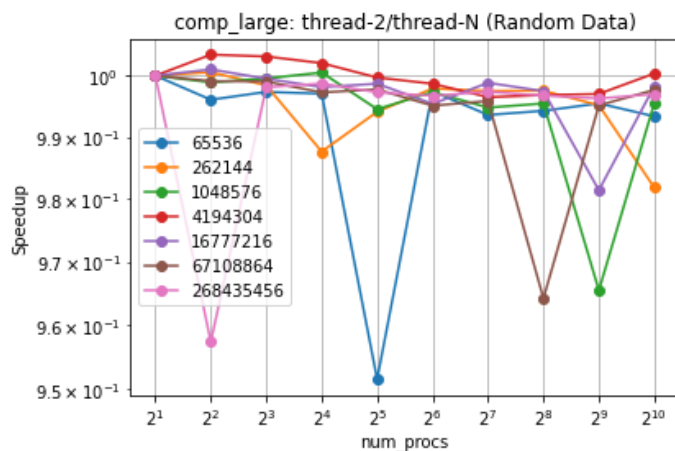
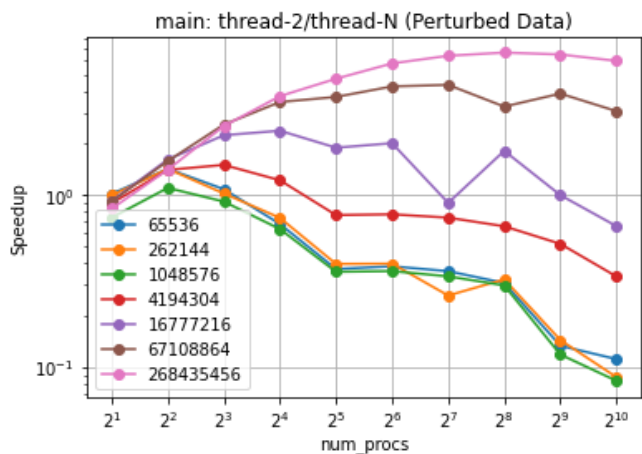
## MPI Implementation (Speedup):

comp\_large: thread-2/thread-N (Perturbed Data)

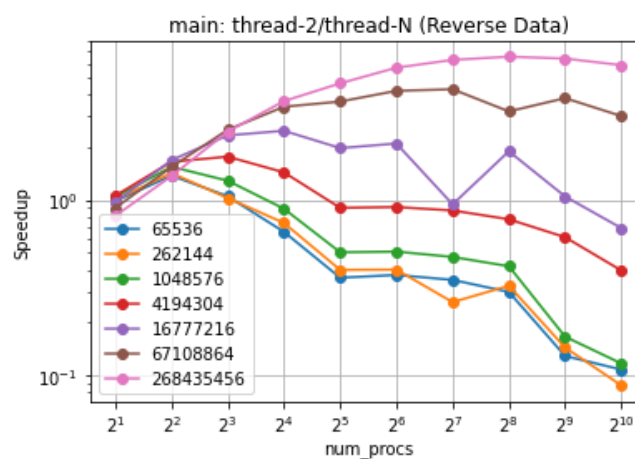
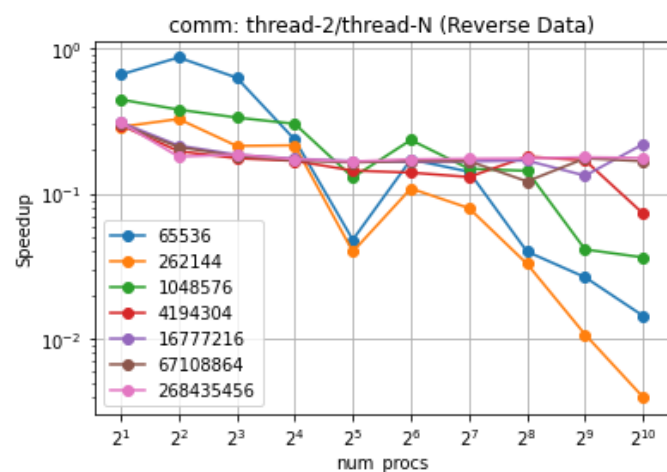
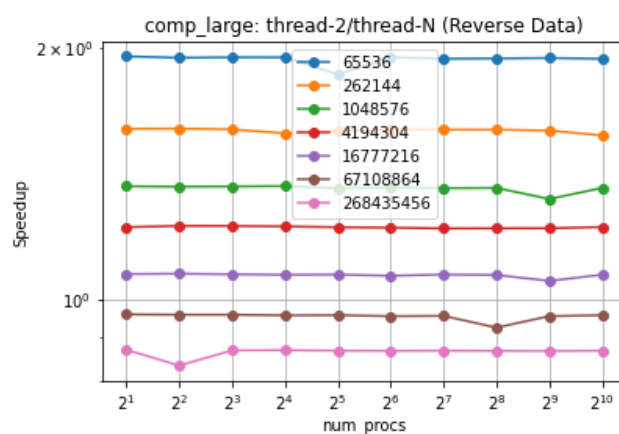
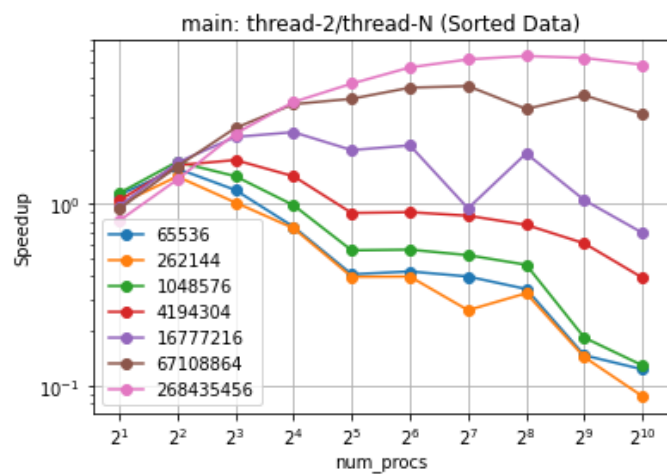


comm: thread-2/thread-N (Perturbed Data)

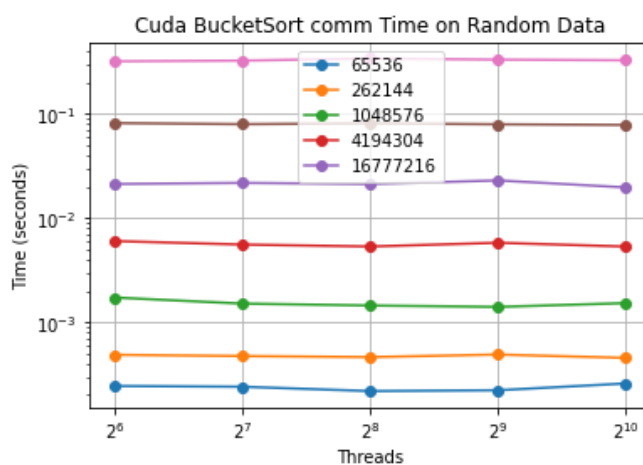
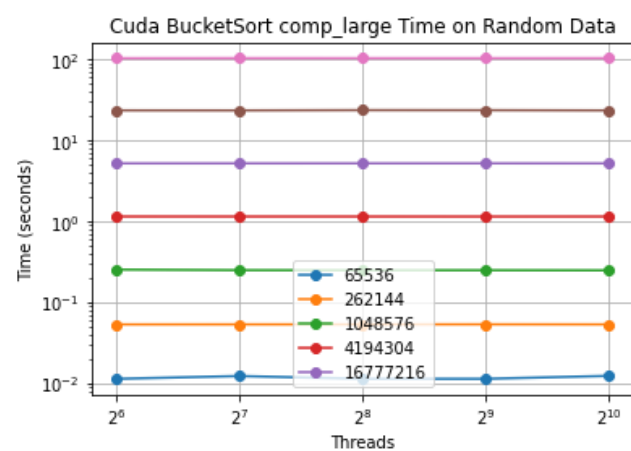




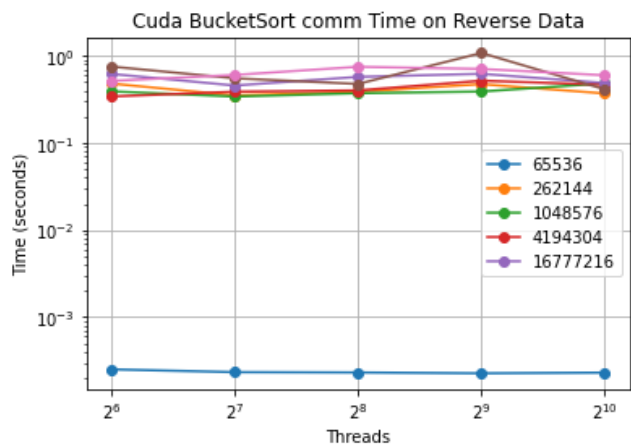
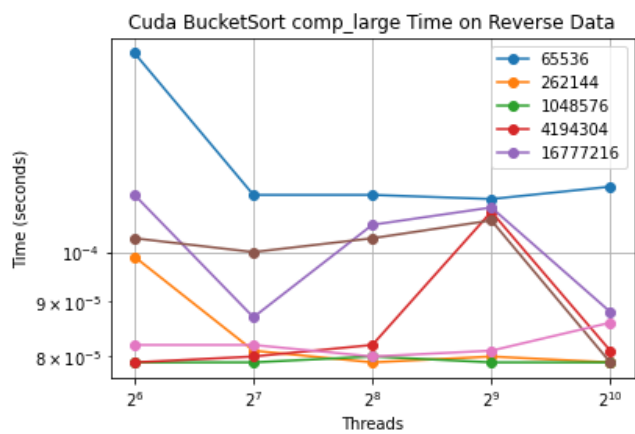
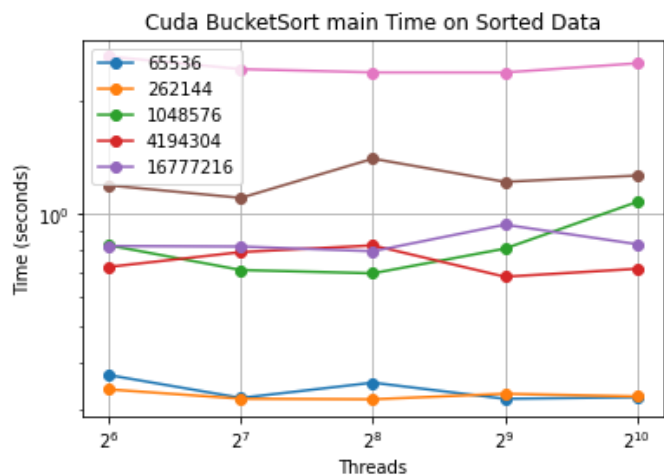
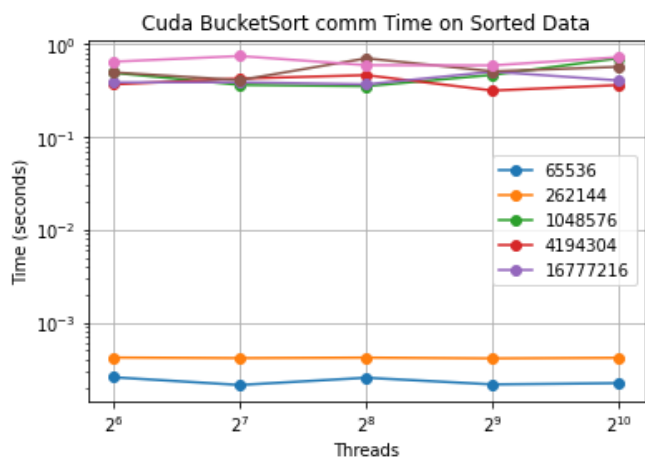
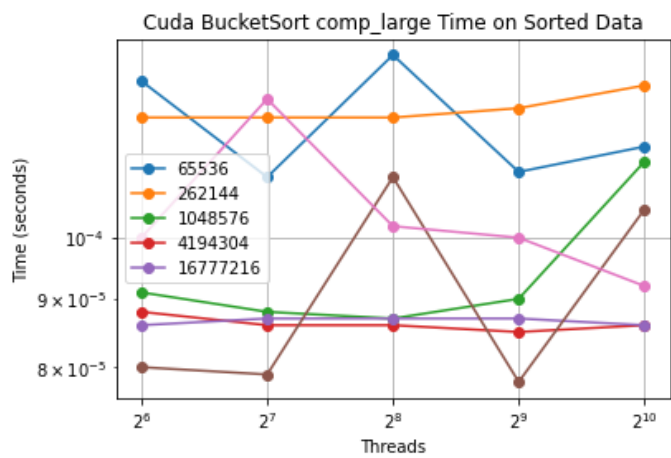
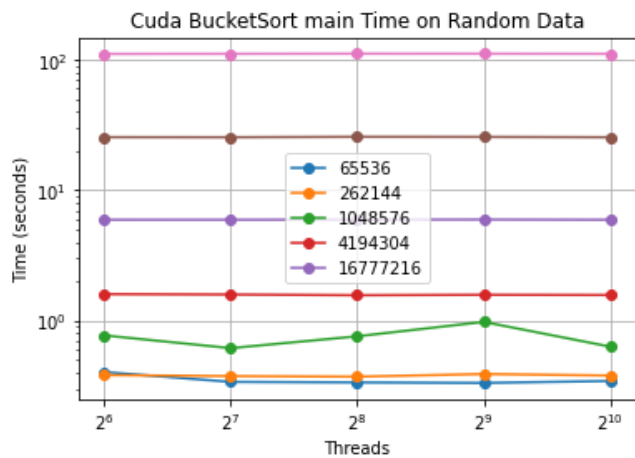


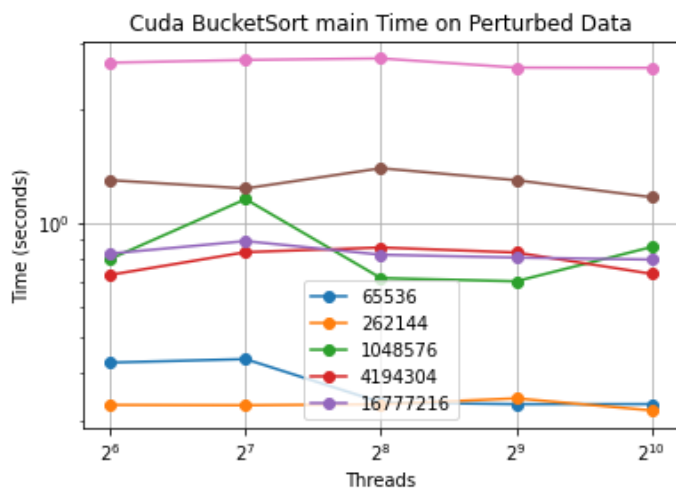
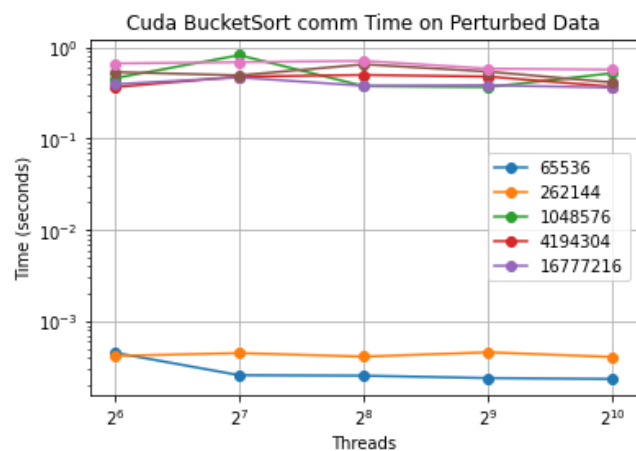
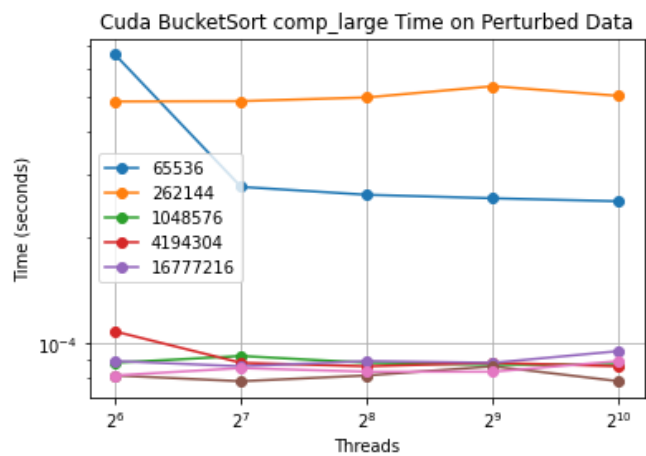
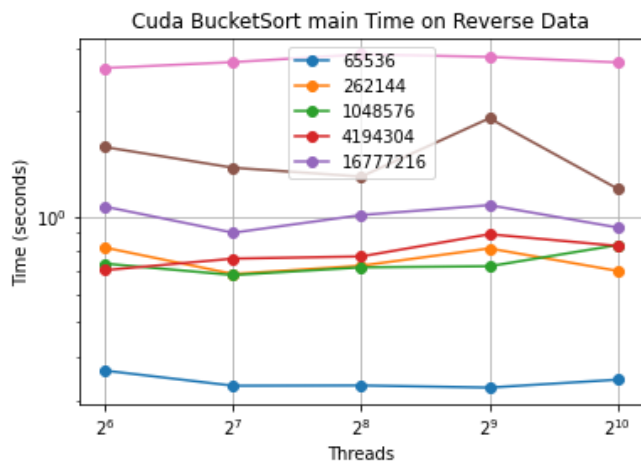


## CUDA Implementation (Weak Scaling):

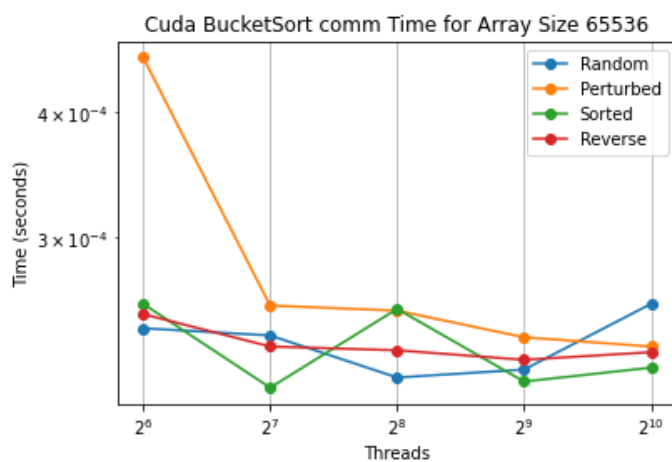
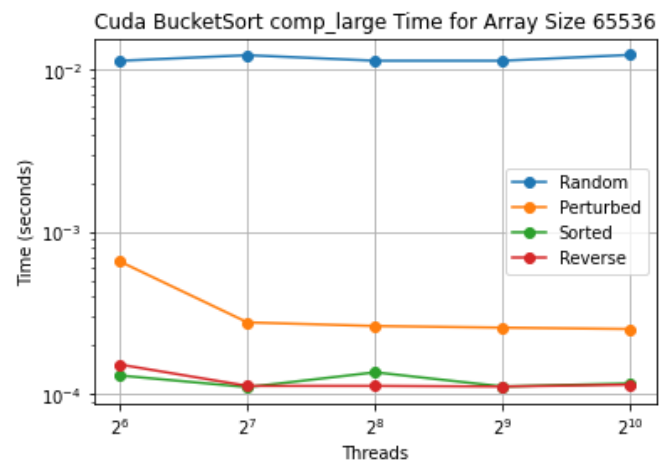


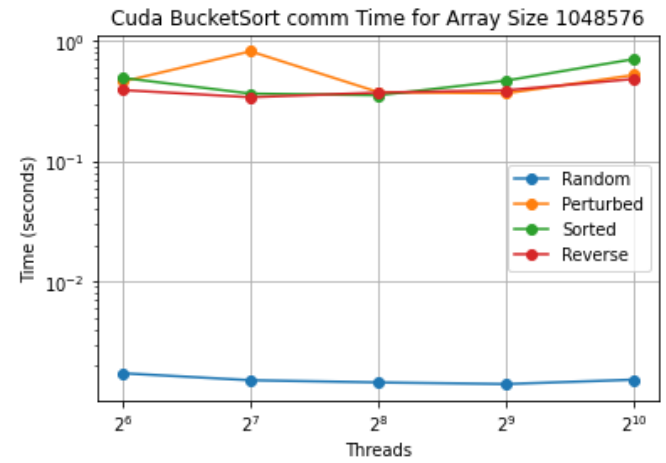
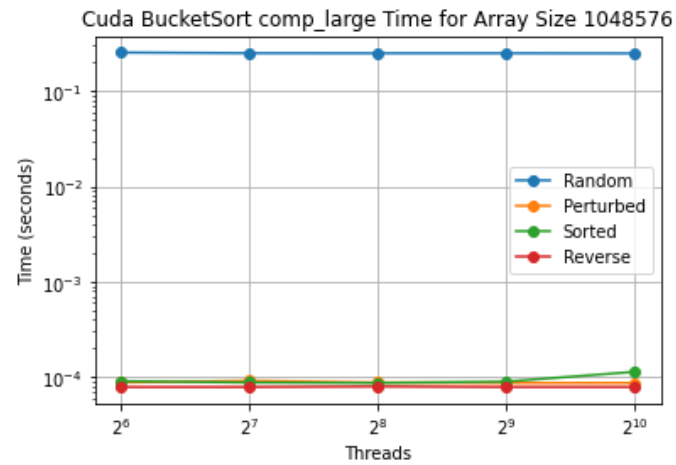
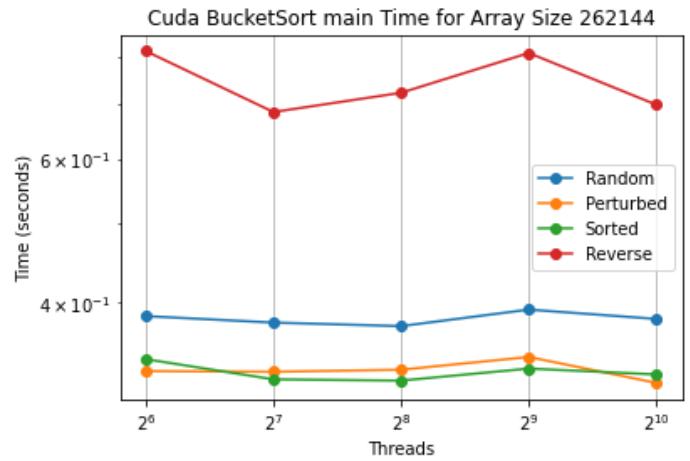
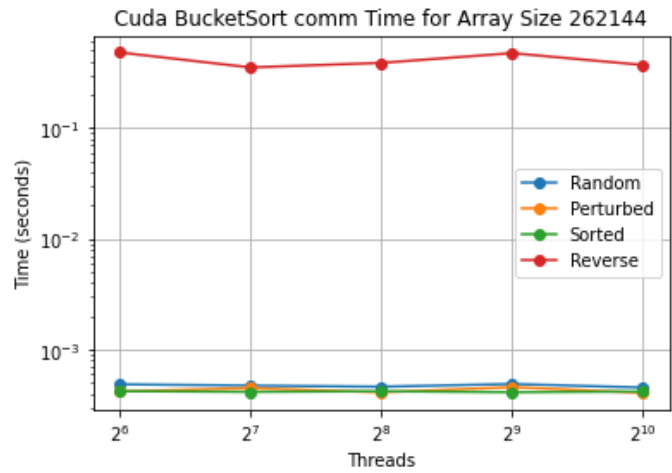
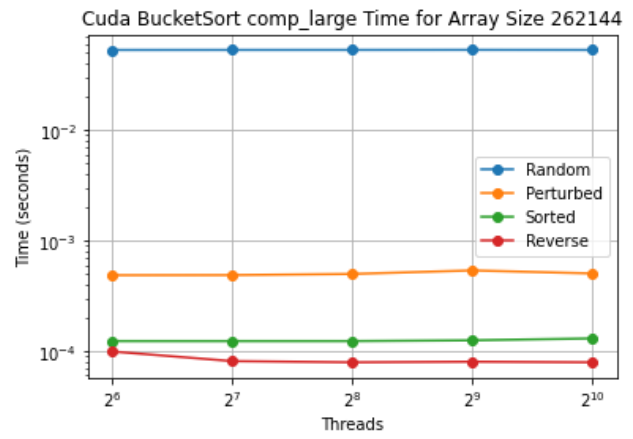
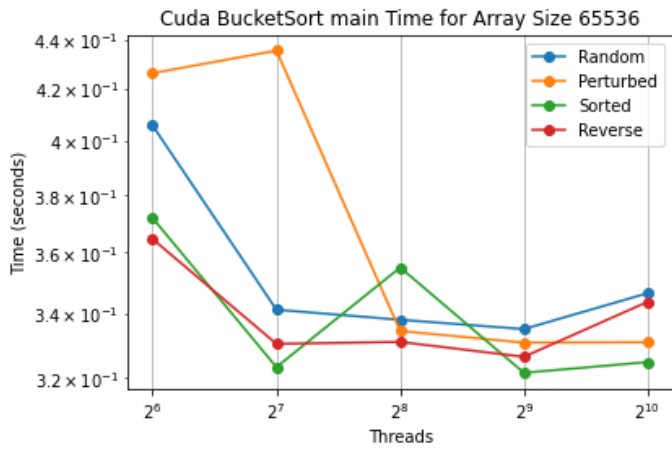


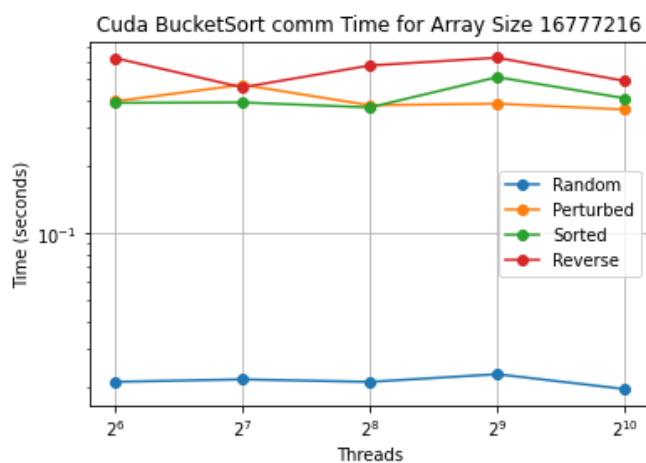
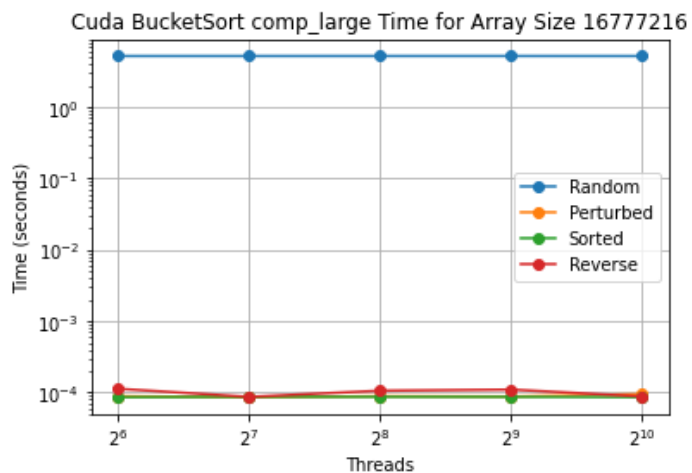
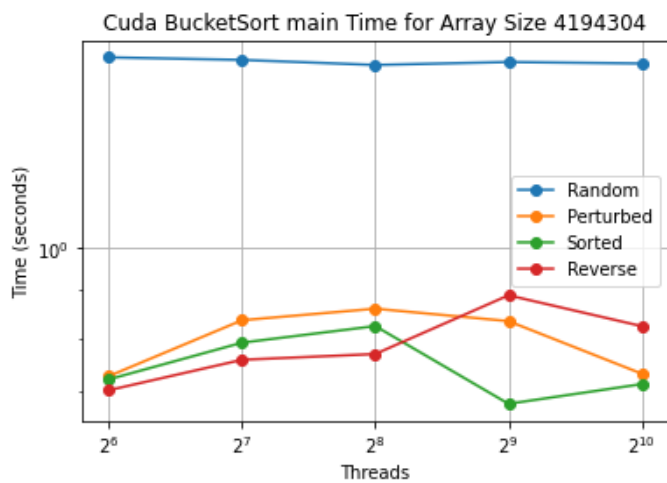
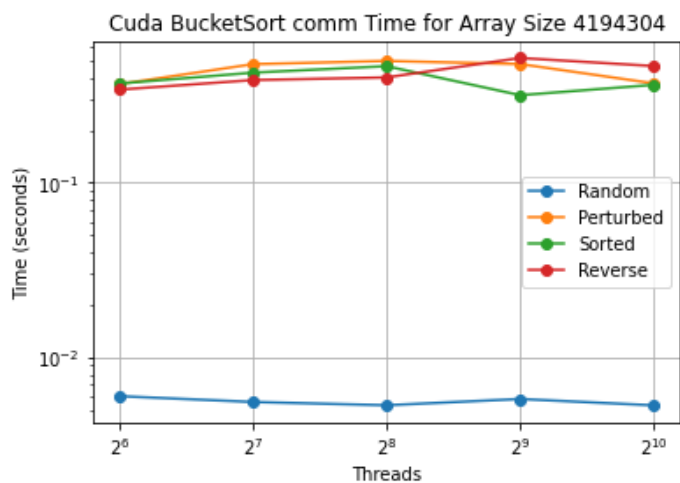
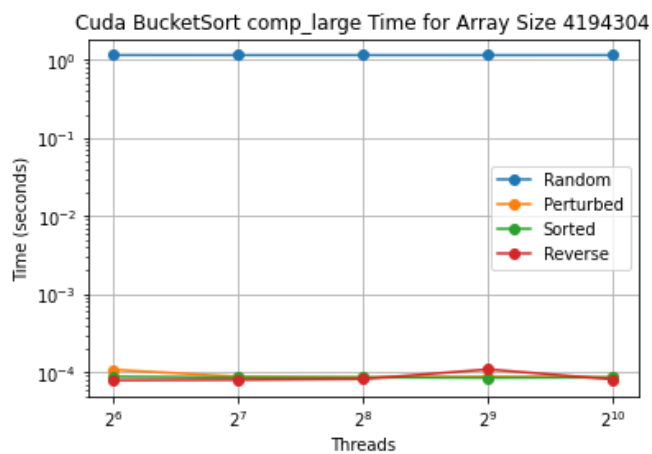
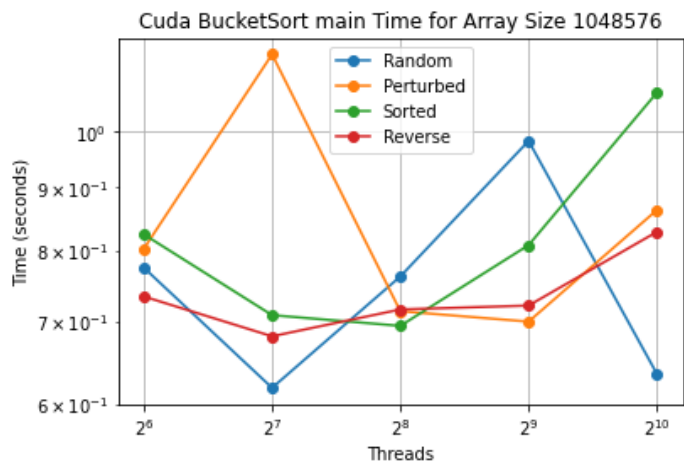


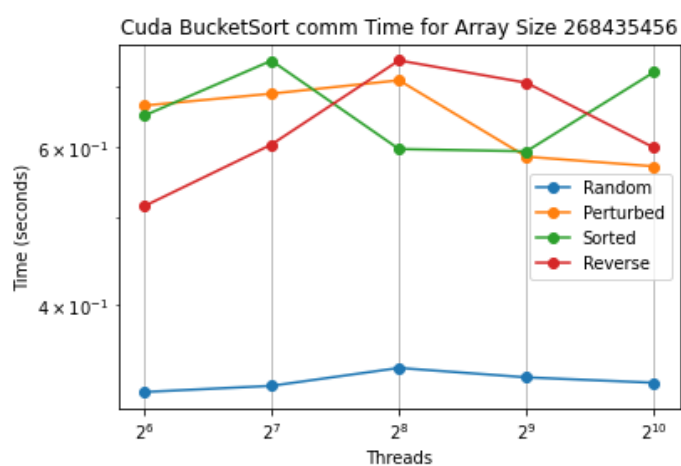
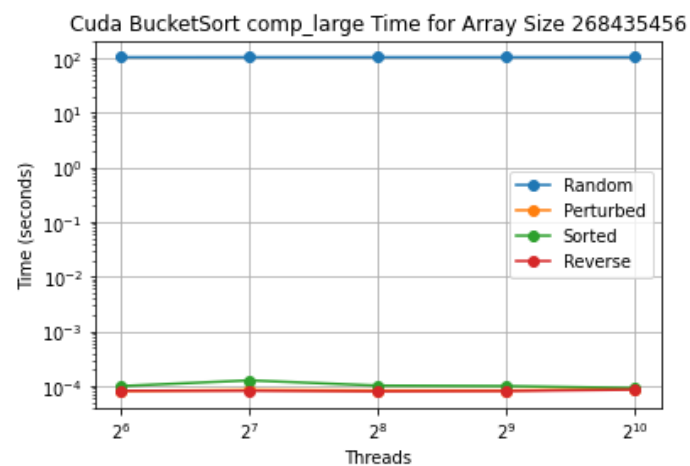
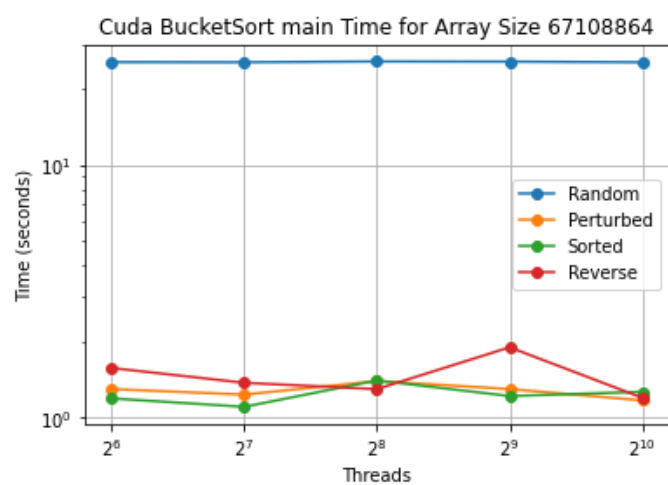
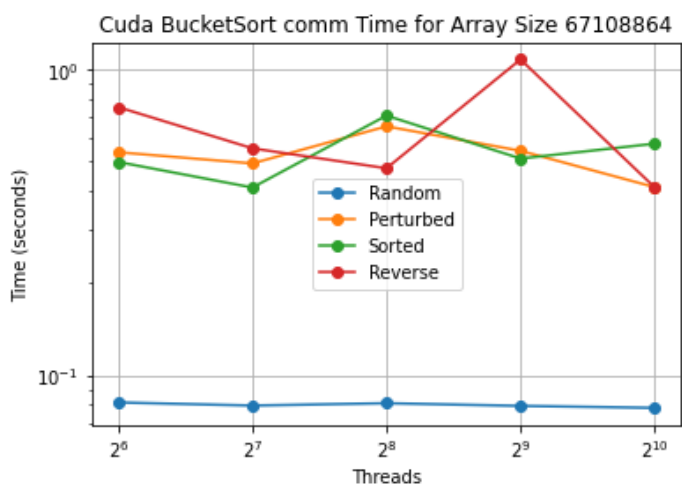
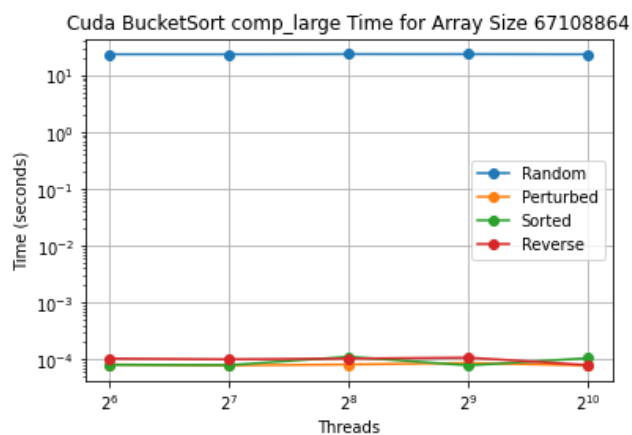
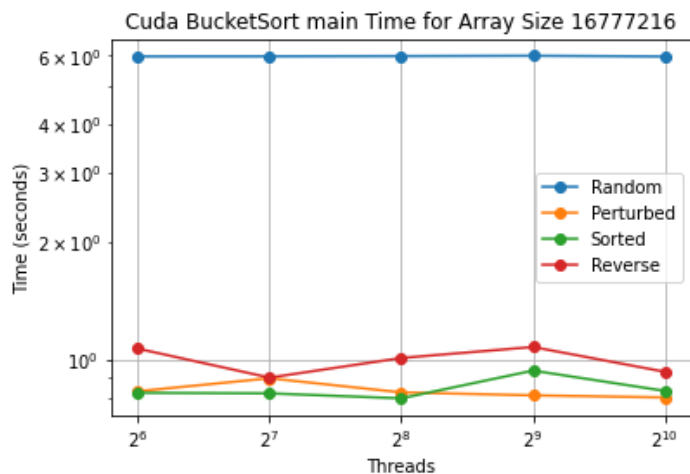


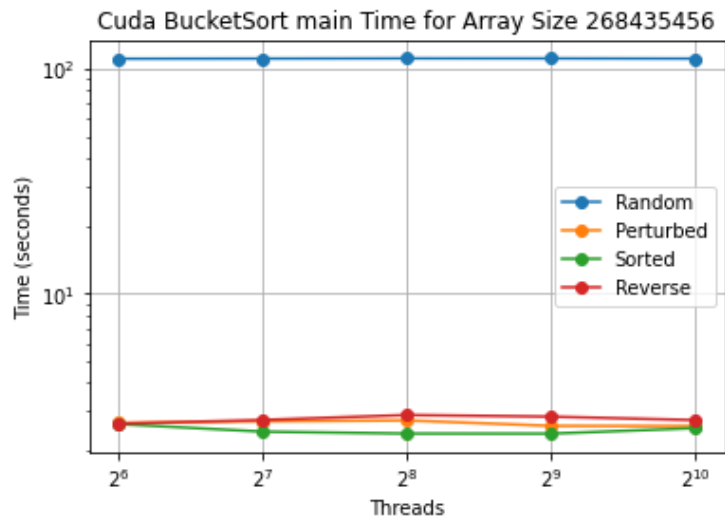
## CUDA Implementation (Strong Scaling):











## CUDA Implementation (Speedup):

