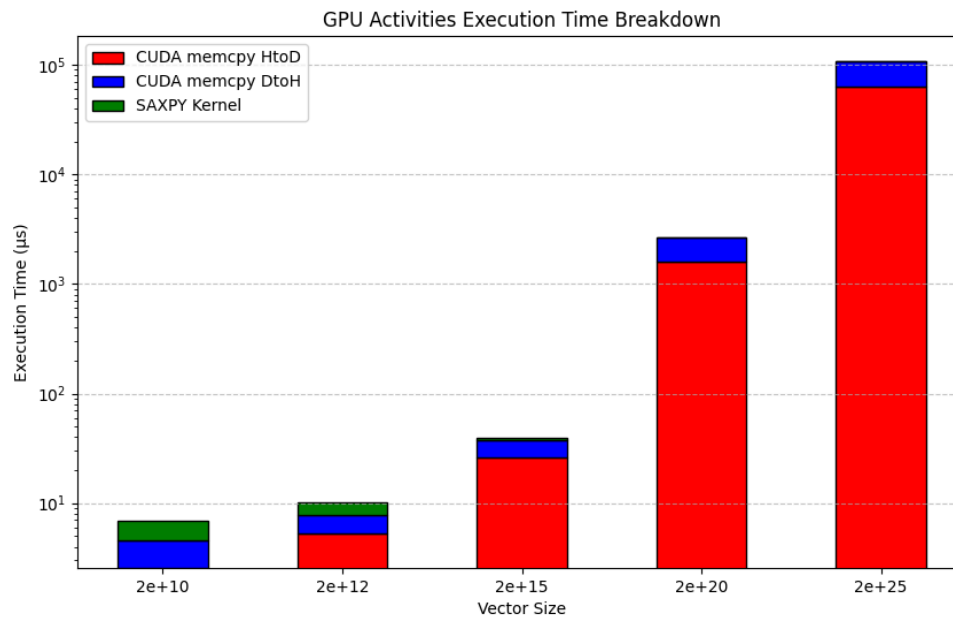


ECE 60827 Programming Assignment 1

Aneesh Kandi | kandia@purdue.edu

SAXPY

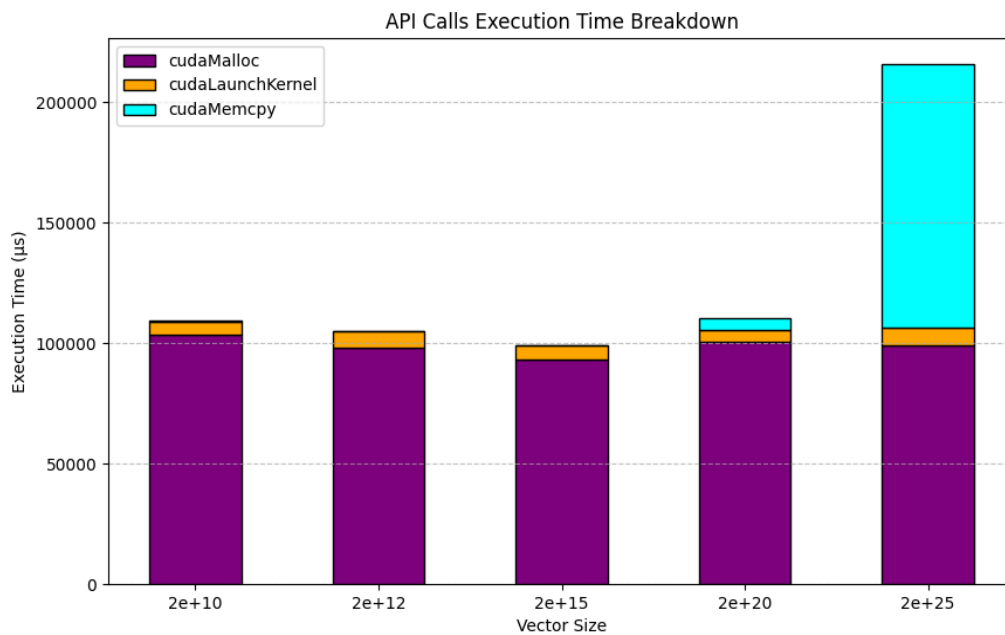
GPU Activities



Observations:

- As the vector size increases, the total execution time increases.
- As the vector size increases, CudaMemCpy (Host to Device) dominates kernel execution time.

API Calls:

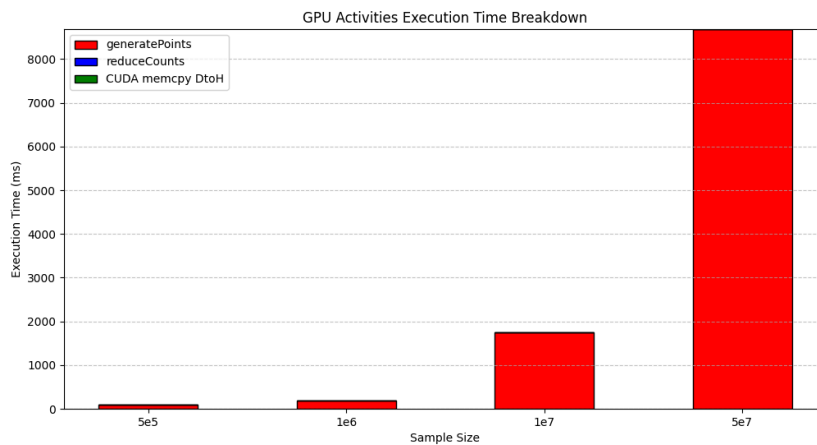


Observations:

Over the initial vector sizes, cudaMalloc dominates in execution time but as we keep increasing the vector size beyond a point, cudaMemcpy exponentially increases and dominates as we can observe in a vector size of 2^{15}

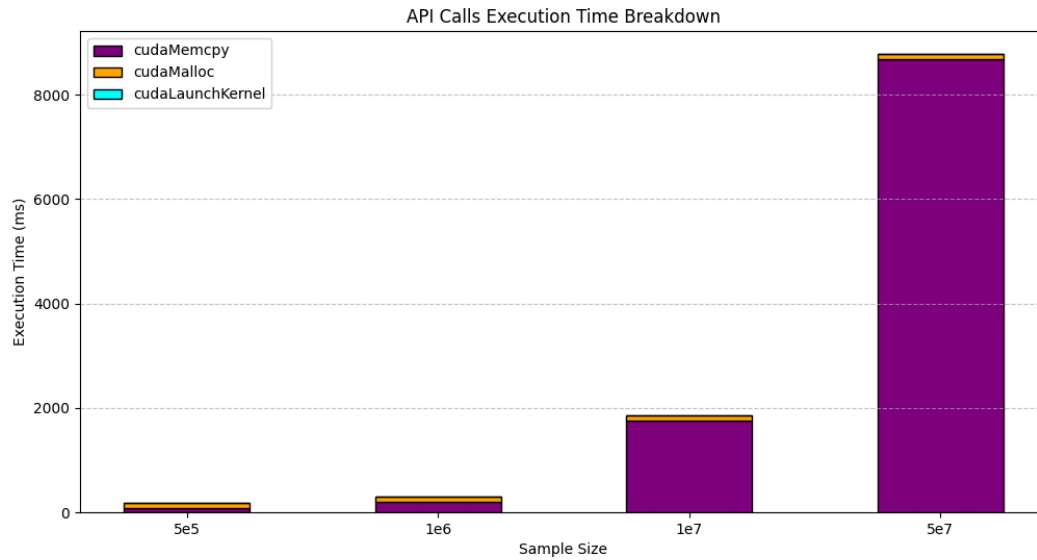
MONTE CARLO

Varying Sample Size while keeping Generate Blocks and Reduce Size Constant



Observation:

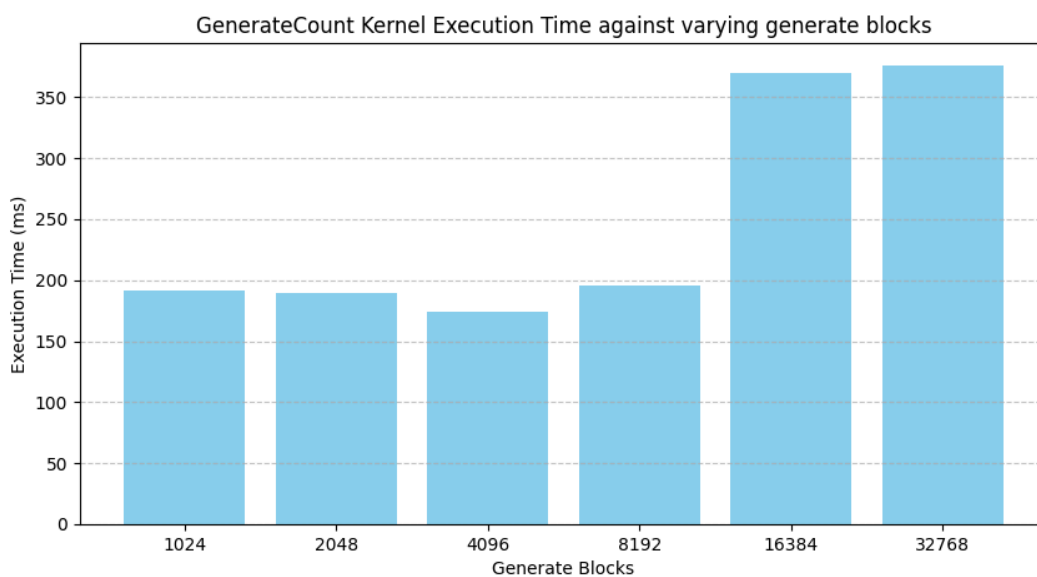
- generatePoints kernel execution time dominates the reduceCounts and cudaMemcpy activities.
- As the sample size increases, the execution time increases rapidly



Observation:

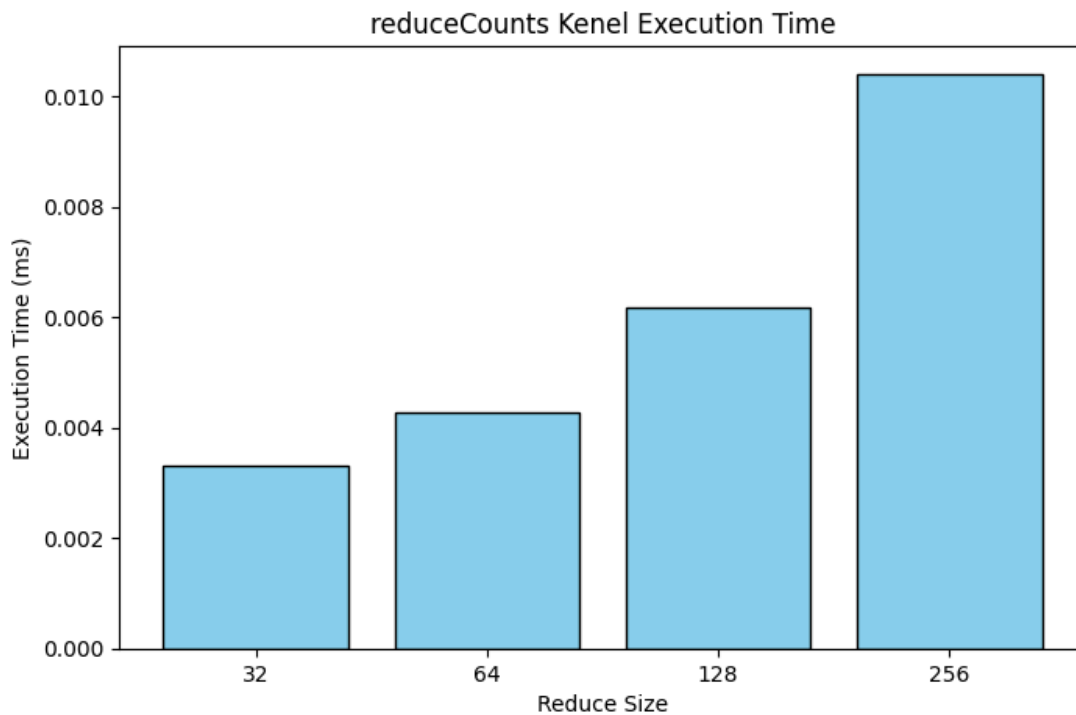
- cudaMemcpy dominates over cudaMalloc and cudaLaunchKernel
- Execution time for all the APIs increases with sample size but cudaMemcpy suffers a rapid increase in execution time compared to the other APIs

Varying Generate Blocks while keeping Sample size and reduce size constant



Observations:

- GenerateCount kernel remains almost constant till 8192, but we can see a sudden increase in the execution time of 16384 generation blocks.

Varying Reduce Size while keeping Sample size and generation blocks constant**Observations:**

- GenerationCount remains dominant, but the reduceCount kernel execution time increases as we increase the reduce size parameter