APT PROJECT REPORT

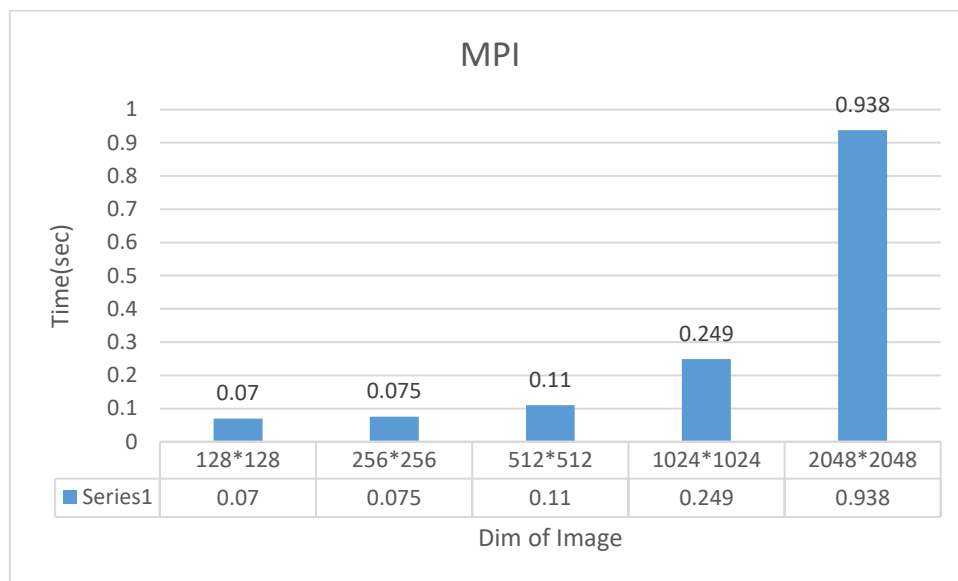**Group Members:**

903423784 Nandan Milind Bedekar

903386023 Ankitha Manoj

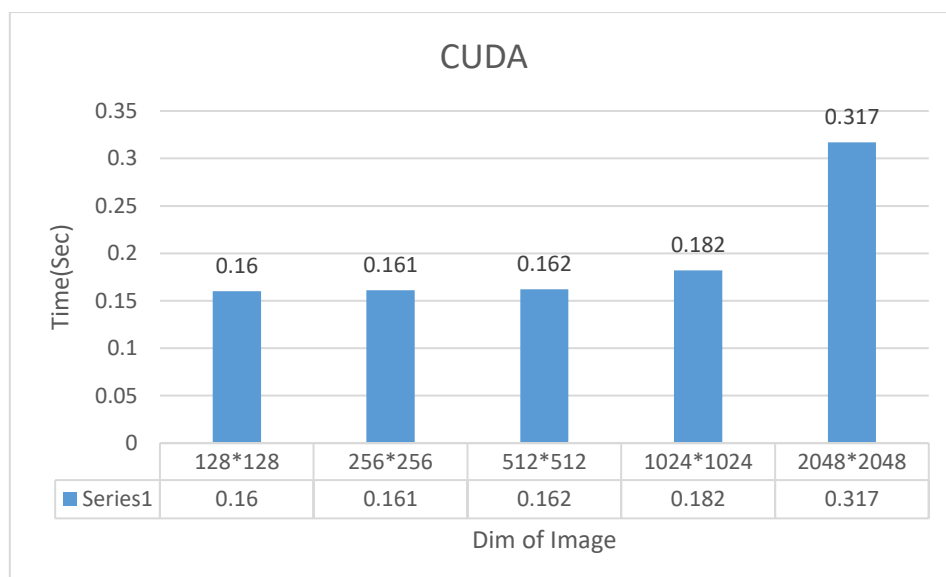903385408 Nimisha Mehta

903113560 Shyam Ramamoorthy

903395616 Pranesh SK

MPI

	128*128	256*256	512*512	1024*1024	2048*2048
Series1	0.07	0.075	0.11	0.249	0.938

CUDA

	128*128	256*256	512*512	1024*1024	2048*2048
Series1	0.16	0.161	0.162	0.182	0.317

C++ Threads

Threads

Dim of Image	128*128	256*256	512*512	1024*1024	2048*2048
Series1	0.132	0.428	2.885	19.262	156.9
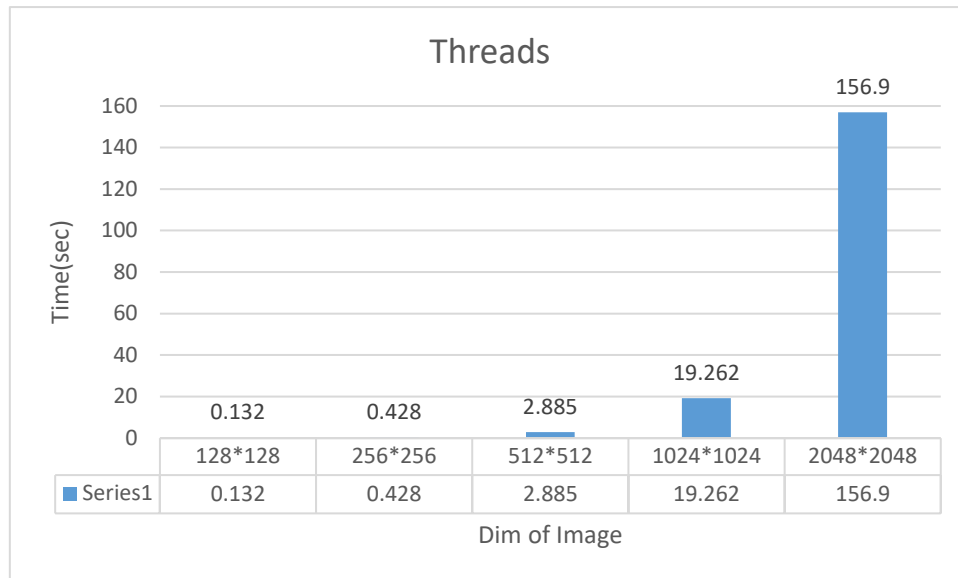
Comparison of MPI,CUDA and C++ Threads

Combination
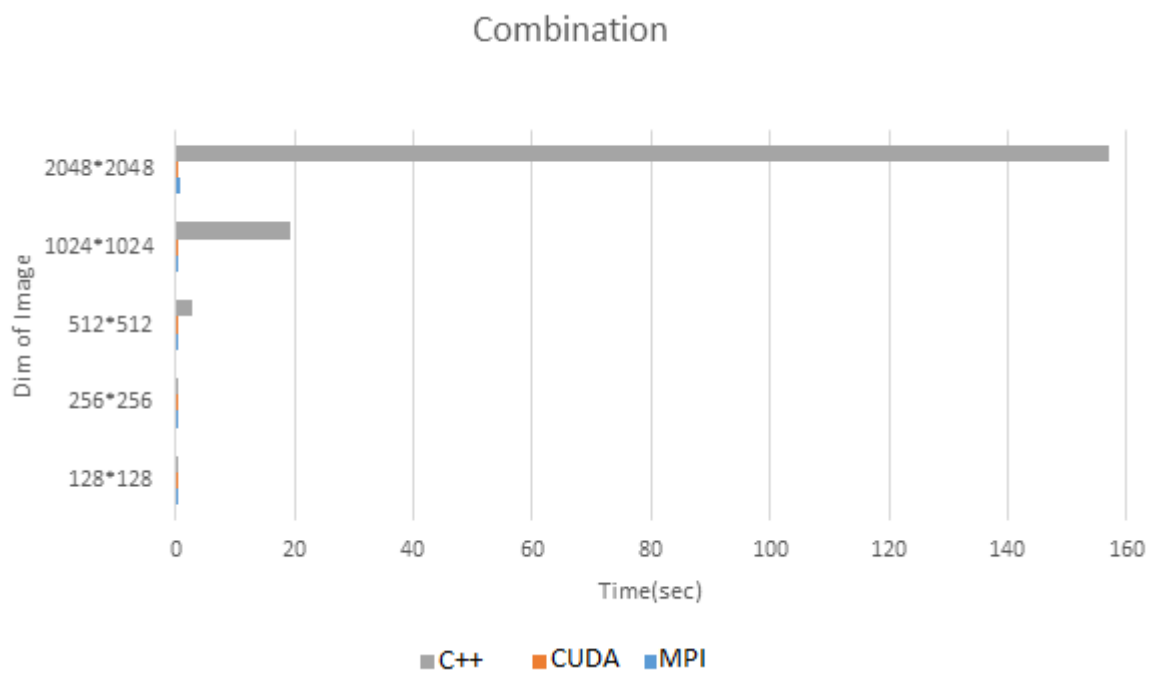
	Mpi (seconds)	Cuda(seconds)	Threads(seonds)
128*128	0.07	0.16	0.132
256*256	0.075	0.161	0.428
512*512	0.11	0.162	2.885
1024*1024	0.249	0.182	19.262
2048*2048	0.938	0.317	156.9

Table of comparison of execution times

We have included one single CMakelists.txt common for all the 3 files. Prior running the cmake commands, please make sure the following commands are run:

- module load gcc/4.9.0 //(which is the default gcc version for pace)
- module load cuda/9.1 //(which is the default cuda version for pace)
- module load openmpi //(which is the default openmpi version for pace)
- module load cmake/3.9.1 //(which is the default cmake version for pace)
- Create a directory within the p3 folder, we have created a build folder. Go to the build folder and give " cmake ../ "
- The binaries of all the 3 programs will be found there.exit
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