

Normal CPU Code:

```
• deepam20050@leanardo:~/Labs$ ./cpu  
[CPU] Transpose Time measured: 0.009156090 seconds.  
[CPU] A_T * A Time measured: 1.196354545 seconds.
```

Cuda GPU Code:

```
• deepam20050@leanardo:~/Labs$ ./gpu  
[GPU] Global Memory Transpose Time measured: 0.037023999 milliseconds.  
[GPU] Global Memory A_T * A Time measured: 6.539904118 milliseconds.  
[GPU] Shared Memory Transpose Time measured: 0.018176001 milliseconds.  
[GPU] Shared Memory A_T * A Time measured: 0.018176001 milliseconds.  
○ deepam20050@leanardo:~/Labs$
```

Speedup:

- Global Memory:
 - a. Transpose :247.30148680049393
 - b. A_T * A :182.9315114432997
- Shared Memory:
 - a. Transpose :503.74612105270023
 - b. A_T * A : 65820.55893372804

OpenACC Code:

```
• deepam20050@leanardo:~/Labs$ ./acc  
[CPU] Transpose Time measured: 0.001850785 seconds.  
[CPU] A_T * A Time measured: 0.003997050 seconds.
```

Speedup:

- Transpose : 4.947138646574292
- A_T * A : 299.3093769154751