

Advanced HPC labwork 2 report

Device Information

Hai Nguyen Ngoc

October 2024

1 Dependencies Installation

1.1 Hardware

Advanced HPC requires the computers contains NVIDIA GPU because CUDA is developed by NVIDIA. CUDA is tied to NVIDIA GPUs.

1.2 OS

CUDA programing is available on Window and Linux, but not for MacOS.

1.3 Numba - Python library

Numba is a library running efficiently on various high performance architecture like multiple core CPU or GPUs.

1.3.1 Parallelization on Multicore CPUs

Numba supports multithreaded execution

1.3.2 GPU Acceleration

Numba compiles functions for running on GPUs, then make it become powerful on accelerated computing.

2 Result

```
Device name: b'NVIDIA GeForce MX250'  
Total memory: 1.95GB  
Multiprocessor Count: 3
```

Figure 1: Device information