SWE 507 PARALLEL PROGRAMMING PROJECT STUDY 4 (2025)
GP-GPU

Due date: 9 May 2025, class time.

In this project, you are expected to do vector parallel computing for the problem either using GPU card on your computer or cloud based solutions such as Google-Colab (see Figure 1). Cuda and Nvidia graphics cards are expected to be used in your solution. Although one solution is sufficient, you can create several versions by changing the memory configuration and discuss the results the class. Implement timing of your solution and discuss the comparative results obtained from earlier project timings (performance test). The solution is supposed to do image processing and you should show us the effect of the processing (correctness test).

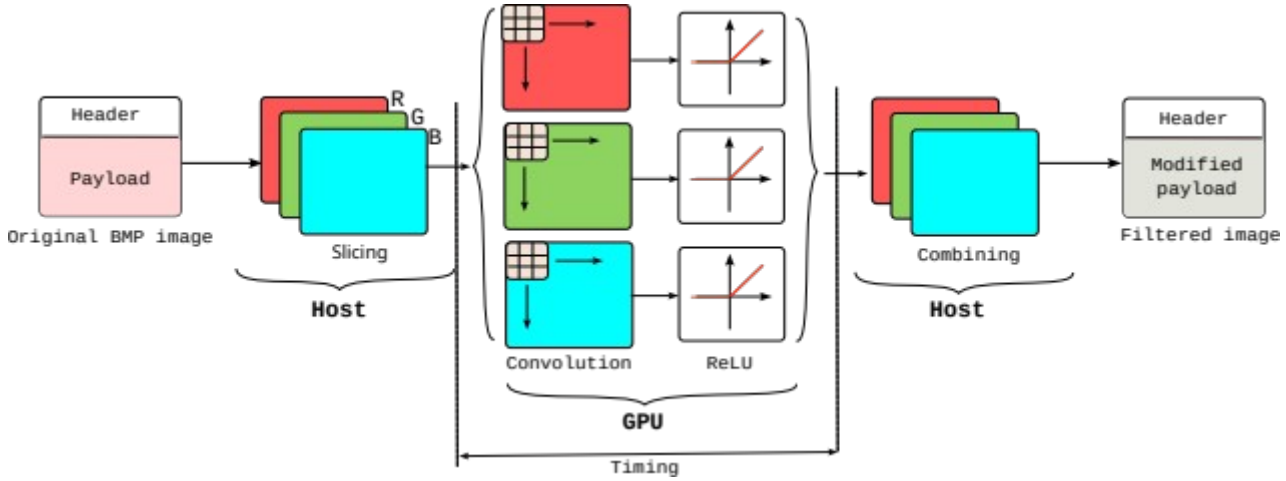

Figure 1. Project 4 block diagram.

0	-1	0
-1	5	-1
0	-1	0

Figure 2. Example kernel (sharpening).

An example 3X3 kernel is shown in Figure 2. which you can use in your implementation. However, you can try other kernels as well.

No	Task	Grade
1	The compiler compiles and runs the project without error.	**60**
2	Time measurements done correctly and results are meaningful.	**20**
3	Comparison and discussions are done.	**20**

PS: In class presentation is required.