

# Assignment 3

**Submission date:** *Sunday, June 2nd*

## **Submission Format:**

Assignments from now on will be done on Colab. Make sure that you run the installation notebook on Colab before running Julia code on notebook. Submit your solution notebook on Github (for this, download your notebook first).

## **Question:**

You need to implement matrix multiplication program in this assignment. Generate two random Float32 square matrices A and B of dimensions  $N \times N$ .

First you will be implementing sequential code in Julia to multiply two square matrices. It must compute  $A \times B$  and store the result in matrix C. Next, you need to write parallel CUDA code for multiplying two square matrices. The kernel should take in three parameters, A, B and C. It must compute  $A \times B$  and store the result in C.

Benchmark sequential and parallel using `@btime` for the following values of N:

- a. 10
- b. 100
- c. 1000

## **NOTE:**

The kernel invocation should have number of threads and blocks as some function of N. So for all values of N above, the kernel call should be the same.