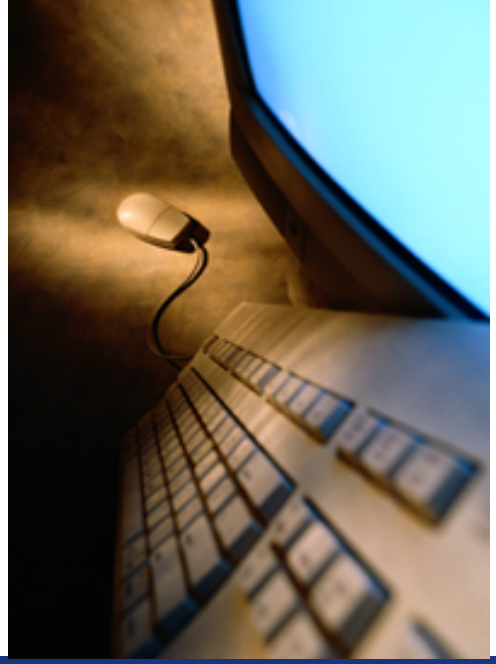
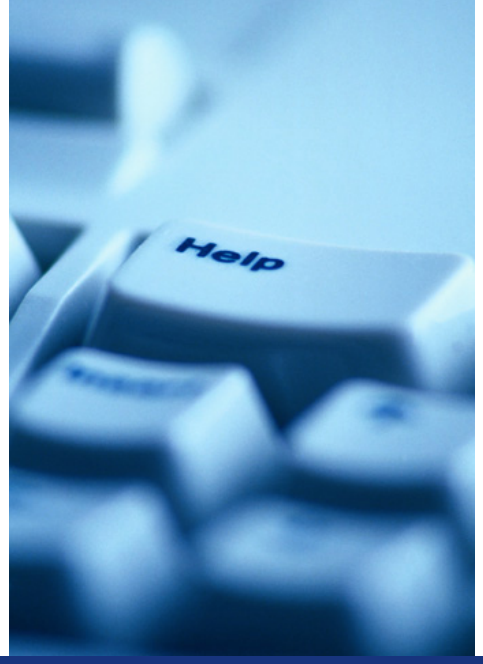

并行与分布式计算

Parallel & Distributed Computing

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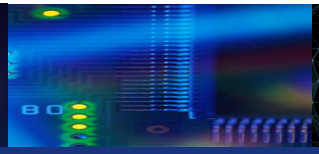
数据科学与计算机学院
2020-07-03



Homework-6

CUDA-homework-1：

Start from the provided skeleton code error-test.cu that provides some convenience macros for error checking. The macros are defined in the header file **error_checks_1.h**. Add the missing memory allocations and copies and the kernel launch and check that your code works.

1. What happens if you try to launch kernel with too large block size? When do you catch the error if you remove the cudaDeviceSynchronize() call?

2. What happens if you try to dereference a pointer to device memory in host code?

3. What if you try to access host memory from the kernel?

Remember that you can use also cuda-memcheck! If you have time, you can also check what happens if you remove all error checks and do the same tests again.

CUDA-homework-2:

In this exercise we will implement a **Jacobi iteration** which is a very simple finite-difference scheme. Familiarize yourself with the provided skeleton. Then implement following things:

1.Write the missing CUDA kernel *sweepGPU* that implements the same algorithm as the *sweepCPU* function. Check that the reported averate difference is in the order of the numerical accuracy.

2.Experiment with different grid and block sizes and compare the execution times.

Thank You !