TDTS08: Lab Report

Lab 5

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Contents

1 Introduction

The article we have choosen is *Numerical Parallel Processing Based on GPU with CUDA Architecture* written by *Chengming Zou,Chunfen Xia,Guanghui Zhao* at the *College of Computer Science and Technology Wuhan University of Technology Wuhan, China*, which is number 15 in the list of articles.

We choose this article because we didn't have a lab about multicore processors and GPUs and we wanted to explore this area further, but also because we think this area is very interesting and that we will se a lot of development in this area over the next few years.

2 Overview

The article is about the differences in between CPUs and GPUs, the CPU has a faster response time and GPU is particularly suitable for high density parallel computing because its multi-stream processor could operate independently and concurrently at high speed when the processor solves problem, reducing the requirement of complex flow control and the computing complexity significantly.

has alot higher throughput than the CPU which means that if we want to calculate a lot of data and it doesn't matter in which order we get the result, then the GPU can be used with an

3 Conclusion

The experimental results clearly show that parallel computation is faster on GPUs. It was also found that the performance increase of the GPU over the CPU increases as the problem size increases, further strengthening the authors argument.