



ABSTRACT

IGNATIUS EDO PUTRA YANUAR. Graphics Card Utilization as a Computing Tool in Information Retrieval Vector Space Model. Supervised by JULIO ADISANTOSO and ENDANG PURNAMA GIRI.

In recent years, the ability of the graphics card or GPU increase dramatically. This condition allows the GPU to do other than computing or graphics processing is known as the General Purpose GPU (GPGPU). With hundreds to thousands of processors inside GPU, hardware is expected to improve the performance of most applications. Unluckly, the price to be able to implement GPU GPGPU could not be reached by the majority of the community.

This research tried to emulate GPGPU on GPU with Shader Model 2.0a support which is a standard GPU. Vector Space Model is used as a case study because it is easy to implement. Information retrieval computation done in parallel by the CPU and GPU. Process in the GPU is divided into three, namely: multiplication, addition, and sorting. Odd-even transition sort algorithms used to sort the most relevant documents.

The results showed that the emulation GPGPU on GPU with Shader Model 2.0a support able to retrieve the same results with the results retrieved by the CPU. However, this emulation can not produce the expected performance, even the GPU requires more memory than the CPU.

Keyword: *GPGPU, GPU Computing, Vector Space Model, Odd-Even Transition Sort*

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