Individual Bibliography

Self-Accelerating Processing Workflows (GPU Vs CPU With Insights to Optimize)

[1] T. Ekblom, Syberfeldt, "A comparative evaluation of the GPU Vs the CPU for parallelization of evolutionary algorithms through multiple independent runs", International Journal of Computer Science & Information Technology (IJCSIT), Vol.9, No.3, June 2017. [Accessed on: 30- Dec- 2019] [Online].

http://aircconline.com/ijcsit/V9N3/9317ijcsit01.pdf

The paper is about a comparison of processing a problem in GPU (general processing) versus CPU. Author mainly focuses on algorithms and its way of execution in detail up to hardware level. Though, Architectures of CPU and GPU are also summarized. Analyzed experiments outcomes of processing problems on GPU vs CPU are provided statistically and supported by graphs drawn time against parallel instances. It would help a programmer to decide whether to use CPU or GPU for his needs.

[2] Z. Memon, F. Samad, Z. Awan, A. Aziz and S. Siddiqi, "CPU-GPU Processing", IJCSNS International Journal of Computer Science and Network Security, Vol.17, No.9, September 2017. [Accessed on: 30- Dec- 2019] [Online].

http://paper.ijcsns.org/07_book/201709/20170924.pdf

The paper analyses the challenges to use GPUs for general processing purposes since they are now in utilized and required for multimedia tasks. The analysis is based on the architecture of the CPUs and GPUs and few CPUs and GPUs in the markets are compared in properties and their performance. Architecture and processing technologies of both CPU and CPU are covered in the paper. It also concludes Heterogenous Computing and future of CPUs and GPUs. It is useful to develop a model that determine whether a problem should be executed in CPU or GPU.

[3] J. Ghorpade, J. Parande, R. Karat, A. Anand "An Introduction to Graphical Processing Unit", International Journal of Modern Engineering Research (IJMER), Vol.1, Issue.2, pp. 358-363. [Accessed on: 31- Dec- 2019] [Online].

http://www.ijmer.com/papers/vol%201%20issue%202/Q012358363.pdf

As titles suggests, the journal is giving an intro to the Graphical Processing Unit, can be a pre-requisite. It also suggests why GPU General Programming is important and states where GPU will work more efficiently than the CPU and GPU/CPU sharing.

[4] J. Ghorpade, J. Parande, M. Kulkarni, A. Bawaskar "GPGPU Processing in CUDA Architecture", Advanced Computing: An International Journal (ACIJ), Vol.3, No.1, January 2012. [Accessed on: 31- Dec- 2019] [Online].
https://arxiv.org/ftp/arxiv/papers/1202/1202.4347.pdf

The journal analyzes NVIDIA's parallel computing framework, CUDA related to other parallel programming platforms and its architecture. Also, it lists CUDA's benefits, limitations, applications and the common myths about CUDA. It might give a better understanding on the topic since CUDA is one of the major platforms in the field.

[5] S. Goyat, A. Sahoo, "Scheduling Algorithm for CPU-GPU Based Heterogeneous Clustered Environment Using Map-Reduce Data Processing", ARPN Journal of Engineering and Applied Sciences, Vol. 14, No. 1, January 2019. [Accessed on: 31- Dec- 2019] [Online].
http://www.arpnjournals.org/jeas/research_papers/rp_2019/jeas_0119_7546.pdf

The journal is specific on Map-Reduce Data Processing within the scope of the topic annotated. MapReduce is a widely used programming framework (scheduling algorithm) for processing and analyzing large data sets in a highly distributed environment (multiple CPUs and GPUs) to solve Big Data problems. It illustrates the MapReduce implementation using targeting single-node and targeting multimode applications.

[6] S. Dhable, S. Kumar, "A Review on GPU Based Parallel Computing for NP Problems", International Journal on Recent and Innovation Trends in Computing and Communication, Vol. 4, Issue: 12, pp. 261 – 264. [Accessed on: 31- Dec- 2019] [Online].
https://pdfs.semanticscholar.org/19a5/35e817a8dd96911b7a106060e46765bca47c.pdf

In computational complexity theory, NP is a complexity class used to classify decision problems. NP problems instances have the answer "yes" and have proofs verifiable in. The paper reviews NP problems and proposes a solution for them. It also contains related work citations useful to the topic.

[7] M. Arora, "The Architecture and Evolution of CPU-GPU Systems for General Purpose Computing" [Accessed on: 31- Dec- 2019] [Online]. http://cseweb.ucsd.edu/~marora/files/papers/REReport_ManishArora.pdf

The title is closer to the topic. The paper explains state of the art GPU architectures and examine GPU design proposals to reduce performance loss caused by SIMT thread divergence. Also, it includes operations of level caches and memory controllers in GPUs and discusses about benchmarks, methodologies and results of solutions proposed for both GPU and CPU.

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