Literature Review

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1 Accelerator Design for Graph Analytics

This paper [1] is essentially a graph accelerator implementation framework of Gather-Apply-Scatter model as in GraphLab. It particularly focuses on iterative graph-parallel applications with asynchronous execution and asymmetric convergence. In order to support domain of graph processing, it has a template of hardware for common operations including memory access, synchronization and communication. In order to provide application specific optimization, a design space exploration is also supported like typical domain specific accelerators.

1.1 Highlights

Here are the list of highlights of this work.

- It targets graph applications with asynchronous execution and asymmetric convergence which doesn't work well on GPUs.

- It developed a synchronous unit (SYU) to support sequential consistency model.

References

[1] Muhammet Mustafa Ozdal, Serif Yesil, Taemin Kim, Andrey Ayupov, John Greth, Steven Burns, and Ozcan Ozturk. Energy efficient architecture for graph analytics accelerators. In *Computer Architecture (ISCA), 2016 ACM/IEEE 43rd Annual International Symposium on*, pages 166–177. IEEE, 2016.