CS 388P Writeup

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October 9, 2012

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Models of parallel computation should attempt to satisfy two goals that are in conflict: a model should be sufficiently abstract to allow algorithm designers to write programs that are simple and portable across architectures, and a model should also expose some low-level architectural details to allow for optimization. The PRAM model is both widely used and simple, yet it has been criticized for being too high-level and thus failing to accurately model parallel machines. Specifically, the PRAM does not model realities of current parallel machines, such as bandwidth limitations. Similarly, network-based models such as the hypercube have been criticized for being too low-level, failing to be widely reflect the current technological state of parallel machines.

Bibliography

[1] P. Gibbons, Y. Matias, V. Ramachandran. "Can a shared memory model serve as a bridging model for parallel computation?" Theory of Computing Systems Special Issue on papers from SPAA'97, vol. 32, no. 3, 1999, pp. 327-359

[2] V. Ramachandran, B.Grayson, M. Dahlin.(2003) Emulations between QSM, BSP and LogP: A framework for general-purpose parallel algorithm design. Journal of Parallel and Distributed Computing, vol. 63, 2003, pp. 1175-1192.