PARALLEL COMPUTERS AND PARALLEL ALGORITHMS

RICHARD P. BRENT

Abstract

The era of serial computation, typified by Von Neumann computers and Turing machines, is coming to an end. Parallel computation is now central to Computer Science, and its importance will increase in the future.

We discuss the motivation for parallel computation (physical constraints on serial computation, biological examples of parallel computation). We describe some practical parallel computer architectures – tightly coupled synchronous machines, loosely coupled asynchronous networks, shared memory and local memory machines, hypercubes and systolic arrays. Concepts such as the *speedup* and *efficiency* of parallel algorithms are defined and illustrated by some examples.

Comments

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References

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Computer Sciences Laboratory, Australian National University, Canberra, ACT 0200
E-mail address: rpb@cslab.anu.edu.au

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