IEEE COMPUTER SOCIETY

IEEE Transactions on Parallel and Distributed Systems

Call for Papers

Special Issue on
Compilers and Languages for Parallel and Distributed Computers

Papers are solicited for a special issue of *IEEE Transactions on Parallel and Distributed Systems* to be published in February 1999. There has been considerable progress made in compiler techniques and language development to exploit concurrency at various architectural and machine organizational levels. New techniques have also been developed to overcome average memory reference latency and synchronization overhead on such systems. The ability of compilers and languages to effectively manage concurrency and improve memory efficiency will be a key to the success of the next generation of computer systems.

This special issue will include, but not be limited to, papers in the following topical areas:

- Compiler techniques and their implementation and language requirements to exploit concurrency on parallel and distributed systems,
- Compiler techniques, their implementations, and language facilities to overcome memory reference latency on parallel and distributed computers,
- Compiler techniques and their implementations which analyze programs globally and interprocedurally for concurrency, data locality, efficient synchronization, and memory latency hiding,
- Compiler techniques and their implementations to exploit instruction-level parallelism on multiple-issue microprocessors, which include superscalars and more recent concurrent multithreaded architectures,
- Empirical studies on the effectiveness and robustness of existing compiler techniques,
- Techniques to improve the efficiency of parallelizing compilers,
- Compiler support and language extensions for exploiting concurrency in Java applications.

We strongly encourage reports on recent experimental results which provide insights into the state-of-the-art, new challenges, and promising research directions in the above topical areas.

Authors must follow all IEEE TPDS guidelines regarding the manuscript and its format. For more details, please refer to "Information for Authors" in each IEEE TPDS issue, or check http://www.computer.org/pubs/tpds. To submit, send a PostScript file of the manuscript to yew@cs.umn.edu and li@cs.purdue.edu by February 15, 1998. (The PostScript file should pass the latest ghostview test.) Electronic submission in postscript format is strongly encouraged to expedite the review process.

IMPORTANT DATES

Submission Deadline:	February 15, 1998
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