ACM Journal on Experimental Algorithmics
Special Issue on Multicore Algorithms
CALL FOR PAPERS

DEADLINE: **September 1, 2011**

Authors are invited to submit papers for a special Issue of the ACM Journal on Experimental Algorithms (ACM JEA) on multicore algorithms.

The recent switch to multi-core processors brought a dramatic change that affects a large spectrum of systems from embedded and general-purpose to high-end computing systems. Parallelism is forcing major changes in software development. The aim of this issue is to discuss the challenges that parallelism brings to the design and implementation of Algorithms and Data Structures. Original submissions are sought that address implementation and performance issues of multicore algorithms and data structures for any multicore processor, for example, Intel Nehalem and Single-Chip Cloud; and NVIDIA and AMD GPUs. An experimental study typically includes an implementation, a series of experiments designed to understand the behavior of the algorithm(s) under study, and a critical discussion of the experiments and their results. Whenever possible, experiments should include test data from previously published studies to enable critical comparisons, although the development of new test suites is also encouraged. Studies of an algorithm in a specific application context of general interest are welcome, as are contributions in the development and understanding of experimental methodologies.

The ACM JEA is a high-quality, refereed, paperless, archival journal devoted to the study of discrete algorithms and data structures through a combination of experimentation and classical analysis and design techniques.

The ACM JEA was established to address the following issues:
- The empirical study of combinatorial algorithms is a rapidly growing research area, with no proper outlet for publication.
- Communication among researchers in this area must include more than a summary of results or a discussion of methods; the actual programs and data used are of critical importance.
- Many published algorithms and data structures have never been implemented by anyone and are at risk of remaining theoretical ``curiosities''. To bring such algorithms and data structures into the practical realm often requires considerable sophistication; researchers need to be encouraged to turn their talents in that direction.
- Most researchers find that they must program their own version of this or that well-known algorithm or data structure, because repositories for these are not available.
- The two preceding reasons also explain why practitioners only rarely use state-of-the-art algorithms and data structures; a repository of routines, most with well documented behavior on realistic test cases, will encourage practitioners to use more recent results.
- Therefore, the ACM JEA has two principal aims: 1) To stimulate research in algorithms based upon implementation and experimentation; in particular, to encourage testing, evaluation and reuse of complex theoretical algorithms and data structures; and 2) To distribute programs and test-beds throughout the research community and to provide a repository of useful programs and packages to both researchers and practitioners.

Information about ACM JEA, including instructions for manuscript preparation, is available on the journal website: http://jea.acm.org . Please submit your manuscript electronically via the submission website, and indicate "Special Issue on Multicore Algorithms" on the cover page and in the notes section of th
e submission form. Manuscripts must conform to the JEA style available at http://jea.acm.org/authors.html

Expanded versions of previously published conference research papers are welcome as long as they contain at least 30% new material; authors should clearly state in a footnote on the first page how the manuscript differs from the conference paper. Papers simultaneously submitted elsewhere may be returned without review. Publication is expected before the end of 2012.

Please contact the guest editors with any questions regarding the special issue.

Guest Editors:
- David A. Bader, Georgia Institute of Technology, www.cc.gatech.edu/~bader/
- Philippas Tsigas, Chalmers University of Technology, www.cse.chalmers.se/~tsigas/

The call for papers, further information, and updates are available at:
http://www.cse.chalmers.se/research/group/dcs/JEA-SIM.html