CALL FOR PAPERS

ANALYSIS OF ALGORITHMS

Special Issue in *Algorithmica*

Average-Case Analysis of Algorithms is the area of Theoretical Computer Science that studies the behavior of algorithms on random inputs. The focus is on average-case analysis of algorithms, deviations from the mean, probability properties that explain the behavior of algorithms on random inputs, among others. The area was initiated by D. E. Knuth more than 40 years ago in order to understand the behavior of algorithms from a quantitative point of view. Performance evaluation of algorithms has been recently the subject of renewed interest. This is due, in part, to the increasing importance of randomized algorithms, and also to the explosion of the digital world, in which inputs are so large that they can only be described in a probabilistic manner.

There have been many new developments in the area of analysis of algorithms in recent years, either due to novel applications (e.g., dynamic data structures, information theory) or due to new methodological tools (e.g., symbolic computation, new methods for asymptotic analysis, new probabilistic techniques). The problems are both practically interesting and mathematically challenging; the new tools are highly nontrivial.

This special issue is seeking papers in any area of theoretical computer science that uses analytical, probabilistic or combinatorial methods to derive average-case analysis of algorithms. To mention a few: sorting and searching, discrete and combinatorial optimization, arithmetic algorithms, algorithms on graphs, coding and communications, algorithms on strings including those applied to molecular biology and data compression, etc. Papers that present new methodological approaches or that deal with random combinatorial structures will also be considered.

A series of seminars dedicated to the the analysis of algorithms was started on 1993. The latest of these seminars was held at the Mathematical Sciences Research Institute (MSRI, Berkeley); see `http://www.cs.purdue.edu/homes/spa/aofa04.html`. A special issue of *Algorithmica* is planned for 2005 on the average case analysis of algorithms to summarize recent achievements in the area. The guest editors: Philippe Jacquet (INRIA, France), Daniel Panario (Carleton, Canada) and Wojciech Szpankowski (Purdue, USA) invite you to submit a paper. Prospective authors should follow the regular guidelines of the journal except that they should **send electronically a postscript or pdf file to either Philippe Jacquet (`philippe.jacquet@inria.fr`) or Daniel Panario (`daniel@math.carleton.ca`)**. The deadline for submission is **January 15, 2005**.

Guest Editors

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