

CALL FOR PAPERS

ANALYSIS OF ALGORITHMS

Special Issue in *Combinatorics, Probability & Computing*

Dedicated to the Memory of Philippe Flajolet

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, and probability distributions that explain the behavior of algorithms on random inputs. The area was initiated by D. E. Knuth nearly 50 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, due to new methodological tools (e.g., symbolic computation, new methods for asymptotic analysis, new combinatorial and probabilistic techniques) and novel applications (e.g., dynamic data structures, information theory). Further, from its beginning, Analysis of Algorithms has both relied on and enriched the study of large random combinatorial structures such as lattice paths, trees, graphs, maps, and models from such allied fields as biology and statistical physics. The applications of Analysis of Algorithms are both practically interesting and mathematically challenging; the tools used are often of an advanced mathematical nature.

This special issue is seeking papers in any area of theoretical computer science or discrete mathematics that uses analytical, probabilistic, or combinatorial methods to derive the exact or asymptotic probabilistic analysis of

- algorithms concerning (to mention a few examples) sorting and searching, discrete and combinatorial optimization, arithmetic algorithms, algorithms on graphs, coding and communications, and algorithms on strings, including those applied to molecular biology and data compression; or
- random combinatorial structures without direct link to algorithms such as (to mention a few) permutations, tableaux, and particle systems, and models of random objects such as graphs, networks, trees, and maps;

or that present new methodological approaches to such problems.

One of Philippe Flajolet's most important legacies is the series of international "AofA" seminars and conferences that have attracted researchers in the field from around the world for the last two decades. A special issue of *Combinatorics, Probability & Computing*, dedicated to his memory, is planned for 2013 to honor his profound impact and present recent achievements in the area. The latest "AofA" conference was held at the Centre de Recherches Mathématiques (CRM) in Montreal; see <http://luc.devroye.org/AofA2012.html>. The guest editors, listed below, invite you to submit a paper. Prospective authors should **send a PDF file by email to Jim Fill** (jimfill@jhu.edu), following the CPC "Submit Your Article" guidelines at <http://journals.cambridge.org/action/displayJournal?jid=CPC>. The deadline for submission is **January 15, 2013**.

Guest Editors

Nicolas Broutin
INRIA
Nicolas.Broutin@inria.fr

Jim Fill
Johns Hopkins Univ.
jimfill@jhu.edu

Markus Nebel
Univ. of Kaiserslautern
nebel@cs.uni-kl.de

Mark Daniel Ward
Purdue Univ.
mdw@purdue.edu