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# Stochastic Algorithms: Foundations and Applications

5th International Symposium, SAGA 2009  
Sapporo, Japan, October 26-28, 2009  
Proceedings

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# Preface

The 5th Symposium on Stochastic Algorithms, Foundations and Applications (SAGA 2009) took place during October 26–28, 2009, at Hokkaido University, Sapporo (Japan). The symposium was organized by the Division of Computer Science, Graduate School of Computer Science and Technology, Hokkaido University.

It offered the opportunity to present original research on the design and analysis of randomized algorithms, random combinatorial structures, implementation, experimental evaluation and real-world application of stochastic algorithms/heuristics. In particular, the focus of the SAGA symposia series is on investigating the power of randomization in algorithms, and on the theory of stochastic processes especially within realistic scenarios and applications. Thus, the scope of the symposium ranges from the study of theoretical fundamentals of randomized computation to experimental investigations on algorithms/heuristics and related stochastic processes.

The SAGA symposium series is a biennial meeting. Previous SAGA symposia took place in Berlin, Germany (2001, LNCS vol. 2264), Hatfield, UK (2003, LNCS vol. 2827), Moscow, Russia (2005, LNCS vol. 3777), and Zürich, Switzerland (2007, LNCS vol. 4665). This year 22 submissions were received, and the Program Committee selected 15 submissions for presentation. All papers were evaluated by at least three members of the Program Committee, partly with the assistance of subreferees.

The present volume contains the texts of the 15 papers presented at SAGA 2009, divided into groups of papers on learning, graphs, testing, optimization, and caching as well as on stochastic algorithms in bioinformatics.

The volume also contains the paper and abstract of the invited talks, respectively:

- Werner Römisch (Humboldt University, Berlin, Germany): *Scenario Reduction Techniques in Stochastic Programming*
- Taisuke Sato (Tokyo Institute of Technology, Tokyo, Japan): *Statistical Learning of Probabilistic BDDs*

We would like to thank the many people and institutions who contributed to the success of the symposium. Thanks to the authors of the papers for their submissions, and to the invited speakers, Werner Römisch and Taisuke Sato, for presenting exciting overviews of important recent research developments. We are very grateful to the sponsors of the symposium. SAGA 2009 was supported in part by two MEXT Global COE Programs: *Center for Next-Generation Information Technology based on Knowledge Discovery and Knowledge Federation*, at the Graduate School of Information Science and Technology, Hokkaido University, and *Computationism as a Foundation of the Sciences* at Tokyo Institute of Technology.

We are grateful to the members of the Program Committee for SAGA 2009. Their hard work in reviewing and discussing the papers made sure that we had an interesting and strong program. We also thank the subreferees assisting the Program Committee. Special thanks go to Local Chair Shin-ichi Minato (Hokkaido University, Sapporo, Japan) for the local organization of the symposium. Last but not least, we thank Springer for the support provided by Springer's Online Conference Service (OCS), and for their excellent support in preparing and publishing this volume of the *Lecture Notes in Computer Science* series.

October 2009

Osamu Watanabe  
Thomas Zeugmann

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