Monte Carlo Methods and Algorithms

Guest Editor:

Prof. Dr. Faming Liang
Department of Statistics, Purdue University, West Lafayette, IN 47906, USA

Deadline for manuscript submissions:
closed (31 January 2018)

Message from the Guest Editor

Dear Colleagues,

The dramatic improvement in data collection and acquisition technologies in the past two decades has enabled scientists to collect vast amounts of data, such as climate data, omics data and credit card records. With growing size typically comes a growing complexity of data structures and of the models needed to account for the structures. Although Markov chain Monte Carlo has proven to be a powerful tool for analyzing the data of complex structures, its computer-intensive nature has limited its applications to big data problems. The objective of this special issue is to motivate developments of scalable Monte Carlo methods that address computational challenges in Bayesian analysis of big data. Topics of interest include (but are not limited to):

- Distributed/parallel MCMC
- MCMC using GPU computing
- MCMC with split-and-merge strategies
- Sequential Monte Carlo
- Advantages of Bayesian Inference for Big Data

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Special issue

Editor-in-Chief

Prof. Dr. Frank Werner
Faculty of Mathematics, Otto-von-Guericke-University, P.O. Box 4120, D-39016 Magdeburg, Germany

Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

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