Algorithms for Hard Problems: Approximation and Parameterization

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Message from the Guest Editors

Dear Colleagues,

Many optimization problems that are of interest for real-world applications are intractable from a worst-case point of view when requiring exact solutions. There are two very successful approaches to attack such computationally hard problems. On the one hand, approximation algorithms do not require to compute exact solutions, but guarantee solutions that are not too far away from the optimum. On the other hand, the time complexity of a fixed-parameter algorithm is polynomial in the input size, but potentially exponential in some parameter of the problem, which often is small for a large subclass of instances.

The open access journal Algorithms will host a Special Issue on "Algorithms for Hard Problems: Approximation and Parameterization". The goal of the Special Issue is to collect new ideas and techniques related to the design and analysis of algorithms that follow the principles of approximation, parameterization, and any combination thereof.

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Special Issue

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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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