Editorial

This special issue is devoted to papers presented at the *11th International Symposium on Experimental Algorithms (SEA)*, which was held in Bordeaux, France, June 7–9, 2012. *SEA*, previously known as *Workshop on Experimental Algorithms (WEA)*, is an international forum for researchers in the area of experimental evaluation and engineering of algorithms and data structures, as well as in various aspects of computational optimization and its applications.

Based on the program committee discussions and the presentations during the conference, the editor invited several papers to be submitted for this special issue. All articles underwent a full reviewing process according to the normal standards of the *Journal of Experimental Algorithmics*, and as a result, six papers were selected for publication in this special issue. These articles are widely expanded versions of the original conference submissions and illustrate the breadth of topics and techniques presented at *SEA 2012*.

In the article “Advanced Coarsening Schemes for Graph Partitioning,” Safro, Sanders, and Schulz focus on the coarsening phase of multilevel graph partitioning strategies. The authors compare different matching- and AMG-based coarsening schemes, experiment with the algebraic distance between nodes, and demonstrate computational results on several classes of graphs that emphasize the running time and quality advantages of different coarsening schemes.

In the article “General Document Retrieval in Compact Space,” Navarro, Puglisi, and Valenzuela develop compact data structures that solve various important document retrieval problems in general text collections. More specifically, the authors provide practical solutions for listing the documents where a query pattern appears, together with its frequency in each document, and for listing k documents where a query pattern appears most frequently.

In the article “Engineering Efficient Paging Algorithms,” Moruz, Negoescu, Neumann, and Weichert focus on efficient implementations for the *ONOPT* class of online paging algorithms described in Moruz and Negoescu [2012], particularly on an algorithm in this class, denoted *RDM*, that was shown to typically incur fewer misses than *LRU*. The authors provide experimental evidence on a wide range of cache traces showing that their implementation of *RDM* is competitive to *LRU* with respect to runtime.

In the article “Efficient Computation of Shortest Paths in Time-Dependent Multimodal Networks,” Kirchler, Liberti, and Wolfler Calvo consider shortest paths on time-dependent multimodal transportation networks where restrictions or preferences on the use of certain modes of transportation may arise. The authors propose a new algorithm, called *SDALT*, which runs considerably faster in many scenarios.

In the article “Paired and Altruistic Kidney Donation in the UK: Algorithms and Experimentation,” Manlove and O’Malley study the computational problem of identifying optimal sets of kidney exchanges in the United Kingdom. The authors show how to expand an integer programming-based formulation due to Roth et al. [2007] in order to model the criteria that constitute the UK definition of optimality. The software arising from this work has been used by the National Health Service Blood and Transplant to find optimal sets of kidney exchanges for their National Living Donor Kidney Sharing Schemes since July 2008.

In the article “Candidate Sets for Alternative Routes in Road Networks,” Luxen and Schieferdecker study the computation of good alternatives to the shortest path in road networks. The authors’ approach is based on single via node routing on top of Contraction Hierarchies and achieves superior quality and efficiency compared to previous methods.

The editor would like to thank the authors and reviewers for their excellent and timely work, and Giuseppe Italiano and Peter Sanders, the editors-in-chief of the *Journal of Experimental Algorithmics*, for their support and the opportunity to edit this special issue.

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Guest Editor