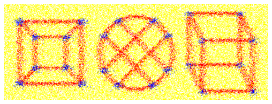
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Special Issue on Selected Papers from the Fourth International Workshop on Algorithms and Computation, WALCOM 2010

Guest Editor's Foreword

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This special issue of Journal of Graph Algorithms and Applications (JGAA) includes full journal versions of five papers selected from the papers presented at the fourth International Workshop on Algorithms and Computation (WALCOM 2010) held in Dhaka, Bangladesh during February 10-12, 2010. Only a few papers among the highly-ranked ones were invited for the special issue based on their merits and relevance to JGAA. The invited papers have gone through the standard refereeing process of JGAA to ensure high publication standards. The special issue is a nice collection of the advances and trends of research in graph algorithms and their applications, including constant-work-space algorithms, graph drawing algorithms and graph modeling for real-world networks.

The first paper *Constant-Work-Space Algorithms for Shortest Paths in Trees and Simple Polygons* by Asano, Mulzer and Wang focuses on the design of fast algorithms in the constant-work-space model using two techniques named "computing instead of storing" and "simulated parallelization". The first technique is applied to the problem of finding a simple path between two nodes in a given tree whereas the second technique is applied to the problem of finding shortest geodesic paths in a simple polygon.

The next two papers are on graph drawing. Binucci, Di Giacomo, Didimo and Rextin in their paper *Switch-Regular Upward Planarity Testing of Directed Trees* have presented a characterization for the class of directed trees that admit switch-regular upward planar drawing. The characterization leads to an optimal linear-time testing and embedding algorithm. The paper *Global k-Level Crossing Reduction* by Bachmaier, Brandenburg, Brunner and Hübner presents a new algorithm to compute a drawing of a directed graph within Sugiyama's framework. The algorithm focuses on the crossing reduction phase and significantly reduces the number of crossings.

Many real world networks such as the World Wide Web, the Internet, biological networks etc. have power-law degree distribution. Such networks are usually called scale-free networks. The fourth paper *A New Model for a Scale-Free Hierarchical Structure of Isolated Cliques* by Shigezumi, Uno and Watanabe presents an interesting model for constructing scale-free networks and analyzes the statistical properties of the constructed graphs.

In a distributed computing environment a faulty node could lead other nodes in the system to behave in a faulty manner. This scenario has been modeled as a spreading message among individuals in a community in the last paper of this issue *Variants of Spreading Messages* by Reddy and Rangan. They have studied several variants of the spreading messages problem and have given some complexity results together with approximation algorithms.

Many thanks go to the authors for contributing their high-quality papers, to the reviewers for their excellent professional service, and to the Editors of the Journal of Graph Algorithms and Applications for making this special issue possible.