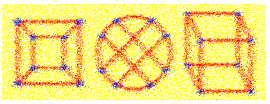
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Special Issue on Selected Papers from the 12th International Workshop on Algorithms and Computation (WALCOM 2018)

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This special issue of Journal of Graph Algorithms and Applications (JGAA) is dedicated to selected papers presented at the 12th International Workshop on Algorithms and Computation (WALCOM 2018) held during March 03-05, 2018, at Dhaka, Bangladesh. WALCOM is an annual conference series on all aspects of algorithms and computation and WALCOM 2018 marked the 12th successful organization of this event which has a special meaning and carries a strong value in local cultural heritage of Bangladesh. In WALCOM 2018, a total of 22 high quality papers which were selected based on thorough reviewing by independent experts followed by in-depth discussion sessions by the Program Committee comprising comprises 37 eminent researchers from Australia, Bangladesh, Canada, Chile, Egypt, Finland, France, Greece, Hong Kong, India, Israel, Italy, Japan, Singapore, South Africa, South Korea, Taiwan, UK and USA.

As per the tradition of WALCOM, the proceedings of WALCOM 2018 were published at Volume 10755 of the LNCS series of Springer in 2018. Extended and revised versions of five top quality papers of WALCOM 2018 have been considered for inclusion in this special issue based on their merits and relevance to JGAA. The invited papers have been rigorously reviewed following the standard refereeing process of JGAA; in particular, fo each manuscript three independent review reports were ensured. In the sequel, one invited paper fell short of the standard of JGAA as per the reviewer recommendation. This special issue therefore contains 4 very high quality papers covering diverse topics in Graph Algorithms and Applications as introduced below.

The special issue starts with the paper titled "Approximating Partially Bounded Degree Deletion on Directed Graphs" authored by Fujito, Kimura and Mizuno. The Bounded Degree Deletion problem (BDD) aims to compute a minimum vertex set in a graph with a particular degree bound such that when it is removed from the graph, the degree of any remaining vertex is no larger than that bound. Here the authors present the first algorithmic results for BDD on *directed* graphs containing *unbounded* vertices (referred to as the Partially Bounded Degree Deletion (PBDD)).

The second paper in this special issue is titled "Faster algorithms for shortest path and network flow based on graph decomposition" and is authored by Kashyop, Nagayama and Sadakane. Here the authors have proposed faster algorithms for the maximum flow problem and shortest path problems – both single source and all pairs shortest path – based on graph decomposition.

The next paper, titled "Random Popular Matchings with Incomplete Preference Lists" and authored by Ruangwises and Itoh, aims to match every person (from a set of people) with a unique item (from a set of item) where each person has a list that ranks his/her preferred items in order of preference. They have presented some interesting results considering the probability of existence of a popular matching when each person's preference list is independently and uniformly generated at random.

Our final paper is titled "A Simple Algorithm for r-gatherings on the Line" is authored by Nakano. Here a recently proposed variant of the facility location problem called the r-gathering problem is studied, where given separate sets of

customers and facilities and distances between each customer-facility pair, the goal to make an assignment of each customer to exactly one open facility such that each open facility has at least r customers and the the maximum distance between a customer-facility pair among the assignment is minimized. This short paper improves upon previous algorithmic results.

Last but not least, we would like to express our sincere gratitude to the authors for contributing their high-quality papers, to the reviewers for their excellent work that led to further improvements, and to the Editors of the Journal of Graph Algorithms and Applications for making this special issue possible. We believe that this special issue will be interesting to the readership of JGAA and will spark future works based on the results, techniques presented in these papers and future research directions discussed therein.