Review Report

on the habilitation thesis of György Dósa
with the title:
Tight results for some classical bin packing algorithms

1 Introductory remarks

György Dósa obtained his PhD degree in mathematics and computing from the University of Szeged in 2009. He has been working at the Department of Mathematics of the University of Pannonia since 1994. In his habilitation thesis, he summarizes his results from roughly the last decade on the theoretical analysis of bin packing algorithms. It is important to mention that he has recently successfully defended his dissertation (closely related to the scientific part of his habilitation thesis) submitted for the 'Doctor of the Hungarian Academy of Sciences' title.

2 Short summary of scientific results

The candidate has given tight estimations for the complexity of the FFD and FF algorithms in the worst case. These estimates are not further improvable. He has also given sharp estimates for the worst-case complexity of the FF algorithm in the parameterized case. Moreover, he has analysed the FFD algorithm in the case of batched bin packing. For two batches, ha has given a tight estimate for the complexity of the worst case.

The theoretical analysis and efficient solution of bin packing problems have fundamental importance in engineering (e.g., in the design and operation of transportation systems, supply chains or manufacturing plants) and in information technology mainly in task scheduling for different computing architectures.

3 Publications

According to the official Hungarian MTMT database, the candidate has published 48 refereed journal papers, out of which 19 appeared in Q1 journals. Moreover, he has 24 conference contributions and one book chapter in the Encyclopedia of Algorithms. The international significance of his results is clearly shown by more than 600 independent citations (more than 800 in Google Scholar). These indicators certainly fulfill the formal publication requirements of the Committee of Information Sciences in the Section of Engineering Sciences of the Hungarian Academy of Sciences as well.

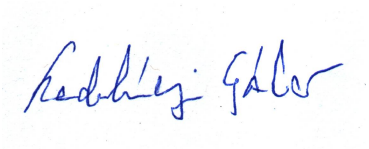
4 Educational and mentoring activity

The educational activity of the candidate also well fulfills the habilitation requirements. Besides the successful research work, he carried a large workload of university lectures and seminars (10-12 hours per week) in the last 5 years. During this period, he was the supervisor of one graduated PhD student and three additional BSc or MSc students. He has also significantly contributed to university education by developing two BSc, one MSc and one PhD courses. The reviewing activity of the candidate (theses, applications, committees) is also significant.

5 Summary

Based on his outstanding scientific results and educational activity, I support opening the public phase of the habilitation procedure for György Dósa. After a successful public phase, I recommend awarding him the habilitation degree in the field of Information Sciences.

Budapest, May 29, 2018



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