Effective Learning-Based Hybrid Search for Bandwidth Coloring

Titre	Effective Learning-Based Hybrid Search for Bandwidth Coloring
Type de publication	Article de revue
Auteur	Jin, Yan [1], Hao, Jin-Kao [2]
Editeur	Institute of Electrical and Electronics Engineers
Type	Article scientifique dans une revue à comité de lecture
Année	2015
Langue	Anglais
Date	Jan-01-2014
Numéro	99
Pagination	624-635
Volume	45(4)
Titre de la revue	IEEE Transactions on Systems, Man, and Cybernetics: Systems
ISSN	2168-2216
Mots-clés	Bandwidth coloring [3], combinatorial optimization [4], learning-based heuristics [5], tabu search [6]
Résumé en anglais	The bandwidth coloring problem (BCP) and the bandwidth multicoloring problem (BMCP) are two important generalizations of the classical vertex coloring problem. This paper presents learning-based hybrid search (LHS) for BCP and BMCP. LHS combines a construction phase to progressively build feasible (partial) colorings and a local search phase to reestablish feasibility when an illegal partial solution is encountered. The construction phase relies on a learning-based guiding function to determine the next vertex for color assignment while the local search phase uses a tabu search repair procedure to resolve coloring conflicts. Experiments on a set of 33 well-known benchmarks for BCP and a set of 33 benchmarks for BMCP demonstrate that the proposed LHS approach can match the best known solution for most benchmarks. In particular, LHS finds an improved best solution for 14 instances.
URL de la notice	http://okina.univ-angers.fr/publications/ua7078 [7]
DOI	10.1109/TSMC.2014.2360661 [8]
Lien vers le document	http://dx.doi.org/10.1109/TSMC.2014.2360661 [8]
Titre abrégé	IEEE Trans. Syst. Man Cybern, Syst.

Liens

[1] http://okina.univ-angers.fr/publications?f[author]=10748

[2] http://okina.univ-angers.fr/jinkao.hao/publications

[3] http://okina.univ-angers.fr/publications?f[keyword]=10932
[4] http://okina.univ-angers.fr/publications?f[keyword]=8860
[5] http://okina.univ-angers.fr/publications?f[keyword]=10933
[6] http://okina.univ-angers.fr/publications?f[keyword]=8662
[7] http://okina.univ-angers.fr/publications/ua7078
[8] http://dx.doi.org/10.1109/TSMC.2014.2360661