Position-Guided Tabu Search Algorithm for the Graph Coloring Problem

Titre	Position-Guided Tabu Search Algorithm for the Graph Coloring Problem
Type de publication	Communication
Type	Communication avec actes dans un congrès
Année	2009
Langue	Anglais
Date du colloque	2009
Titre du colloque	Third International Conference, LION 3
Titre des actes ou de la revue	Learning and Intelligent Optimization
Volume	5851
Pagination	148 - 162
Auteur	Cosmin Porumbel, Daniel [1], Hao, Jin-Kao [2], Kuntz, Pascale [3]
Pays	Italie
Editeur	Springer
Ville	Trente
ISBN	978-3-642-11168-6 / 978-3-642-11169-3
Mots-clés	Artificial Intelligence (incl. Robotics) [4], Data Mining and Knowledge Discovery [5], Information Storage and Retrieval [6], Models and Principles [7], Special Purpose and Application-Based Systems [8]
Résumé en anglais	A very undesirable behavior of any heuristic algorithm is to be stuck in some specific parts of the search space, in particular in the basins of attraction of the local optima. While there are many well-studied methods to help the search process escape a basin of attraction, it seems more difficult to prevent it from looping between a limited number of basins of attraction. We introduce a Position Guided Tabu Search (PGTS) heuristic that, besides avoiding local optima, also avoids re-visiting candidate solutions in previously visited regions. A learning process, based on a metric of the search space, guides the Tabu Search toward yet unexplored regions. The results of PGTS for the graph coloring problem are competitive. It significantly improves the results of the basic Tabu Search for almost all tested difficult instances from the DIMACS Challenge Benchmark and it matches most of the best results from the literature.
Notes	Date du colloque : 01/2009
URL de la notice	http://okina.univ-angers.fr/publications/ua4497 [9]
DOI	10.1007/978-3-642-11169-3_11 [10]
Lien vers le document en ligne	http://dx.doi.org/10.1007/978-3-642-11169-3_11 [10]

Liens
[1] http://okina.univ-angers.fr/publications?f[author]=10965
[2] http://okina.univ-angers.fr/jinkao.hao/publications
[3] http://okina.univ-angers.fr/publications?f[author]=7537
[4] http://okina.univ-angers.fr/publications?f[keyword]=6729
[5] http://okina.univ-angers.fr/publications?f[keyword]=6001
[6] http://okina.univ-angers.fr/publications?f[keyword]=8849
[7] http://okina.univ-angers.fr/publications?f[keyword]=8844
[8] http://okina.univ-angers.fr/publications?f[keyword]=9015
[9] http://okina.univ-angers.fr/publications/ua4497
[10] http://dx.doi.org/10.1007/978-3-642-11169-3_11