Experimenting Genetic Approach to Extend Rectangular Packing Heuristic Solution

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Abstract

Nesting (Cutting and Packing) problems are optimization problem encountered in many areas of business that look for good arrangement of multiple items in larger containing regions. The objective of this problem is to maximize the utilization of resource material. There is a large range of the applicability of these problems as there are many diverse instances of it that are encountered in the industries as paper, glass, plastic and foam, leather, sheet metal cutting, furniture, garments, ship-building, shoe-making, car production, building materials, packaging etc. Most of the standard problems related to Nesting are known to be NP-complete. The development of exact algorithms which are faster and produce near optimal solutions is still a major research issue in this area. Proliferation of sophisticated desktops and faith of researchers in meta-heuristics have further allowed them to look beyond the traditional optimization techniques to solve this hard problem. In this paper Authors have tried to explore further expansion in feasible patterns for rectangle packing by applying genetic operators on the initial population of feasible patterns generated by revised AYC Nee’s Rectangle Packing heuristic.
Reference


Index Terms

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Key words

Genetic algorithm
NP-complete
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