2PDC HEURISTIC GENETIC APPROACH FOR OPTIMIZING 1D BIN PACKING PROBLEMS

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Abstract

This paper presents a heuristic Genetic Algorithm (HGA) for optimizing one dimensional (1D) arbitrary sized boxes into a container, by considering practical constraints facing in the shipment container loading industries. Objective of this research is to pack boxes of varying length into a container of standard dimension, without violating major practical constraints to obtain a real time feasible packing pattern. HGA is developed to maximize the container volume utilization and inturn profit. It significantly improves the search efficiency with less computational time and loads most of the heterogeneous boxes into the container by considering its optimal position and orientation. In general, HGA in comparision with the traditional genetic algorithm is substantially better and more satisfactory.

Keywords: Genetic Algorithm, Container Loading, Logistics.