Algorithm for Layered Distribution Boxes

A heuristic-based online palletization algorithm that efficiently stacks boxes without requiring a buffer or prior knowledge of the incoming sequence. The algorithm incorporates a backtracking feature to fill ...

Abstract--We present a novel algorithm that solves the distributor"s pallet packing problem. In contrast to existing algorithms, our method optimizes stack stability in addition to stack volume.

This paper presents an online palletization algorithm, designed primarily for robotic applications, designed to handle varying-sized boxes in industrial environments.

To well relieve the research gaps, we present a novel optimization methodology of two-dimensional (2D)-BPP and three-dimensional (3D)-BPP for objects with regular shapes via deep reinforcement ...

Basic requirements are boundary and geometric constraints, which require that items be packed within bin boundaries and without overlapping, respectively. There may be additional requirements on the ...

To stay on top of shifting carrier rates and actually minimize total landed cost, logistics providers use cost-aware 3D cartonization and palletization solutions that factor in the full rate structure when ...

We introduce both a layer-based column generation algorithm (LCGA) and a branch-and-price method to obtain solutions to 3DBPP. In this subsection, we explain both of these approaches.

This paper presents two different variants of a genetic algorithm framework for the three-dimensional container loading problem for optimally loading boxes into multiple containers with...

In this work, we provide a complete solution approach for pallet loading problems where practical constraints of vertical support, load bearing, planogram sequencing, and weight limits are ...

Computational tests on industry data demonstrate the efficiency of the approach in producing high-quality solutions in quick computational times, consistently placing around 80% of ...

Move all products in one box to other boxes with the goal of get as close to 0 remaining space as you can, ideally start by looking for moves that result in exactly 0 remaining space (only by ...

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