THE CONTAINER STACKING PROBLEM: AN ARTIFICIAL INTELLIGENCE PLANNING-BASED APPROACH

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ABSTRACT
Large container ports around the world are major hubs in the global cargo transport system. A container stack is a type of temporary store where containers await further transport by truck, train or vessel. The main efficiency problem for an individual stack is to ensure easy access to containers at the expected time of transfer. In this paper, we propose a planning tool for finding the best configuration of containers in a bay. Thus, given a set of outgoing containers, our planning tool minimizes the number of relocations of containers in order to allocate all selected containers in an appropriate order to avoid further reshuffles. Furthermore, we compare the number of reshuffles in yard-bays with 4 tiers against yard-bays with 5 tiers. The obtained results recommend the use of stacks with 5 tiers in high loaded yard-bays, due to the fact that the number of reshuffles is reduced.

Keywords: container-stacking, artificial intelligence, planning
REFERENCES


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