

OLS24

DEEP LEARNING FOR STORAGE ASSIGNMENT IN AUTOMATED WAREHOUSE SYSTEMS

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Abstract

This study addresses the challenge of adapting storage assignments in e-commerce robotized warehouses to changing customer order patterns. Traditional static methods, such as random and class-based storage, are limited to historical data. Motivated by the shortcomings of these methods, we propose a deep-learning approach that dynamically assigns products to storage locations based on real-time changes in product popularity. The proposed deep learning approach identifies products that are becoming more popular or vice versa and moves them to a more appropriate location to dynamically re-configure the warehouse. Results show significant performance gains over traditional storage methods, particularly when product popularity shifts, leading to faster retrieval times and increased throughput.

Conference Track

Operations, Logistics and Supply Chain Management