Fast Edge-Based Detection and Localization of Transport Boxes and Pallets in RGB-D Images for Mobile Robot Bin Picking

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Abstract:
Mobile manipulation tasks in shopfloor logistics require robots to grasp objects from various transport containers such as boxes and pallets. In this paper, we present an efficient processing pipeline that detects and localizes boxes and pallets in RGB-D images. Our method is based on edges in both the color image and the depth image and uses a RANSAC approach for reliably localizing the detected containers. Experiments show that the proposed method reliably detects and localizes both container types while guaranteeing low processing times.

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