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A Simulated Sensor-based Approach for Kit Building Applications

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Abstract

Kit building or kitting is a process in which individually separate but related items are grouped, packaged, and supplied together as one unit (kit). This paper describes advances in developing sensing/control and parts detection technologies enabling robust operation of kitting applications in simulation. To pick and place parts and components during kitting, the kitting work-cell relies on a simulated sensor system to retrieve the six-degree of freedom (6DOF) pose estimation of each of these objects. While the use of a sensor system allows objects poses to be obtained, it also helps detecting failures during the execution of a kitting plan when some of these objects are missing or are not at the expected locations. A kitting system is presented and the approach that is used to task a sensor system to retrieve 6DOF pose estimation of specific objects (objects of interest) is given.

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Keywords: simulated sensor, simulation, kitting, robotics, pose estimation

1. Introduction

References