

Optimizing Pick and Place Operations in a Simulated Work Cell for Deformable 3D Objects

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Abstract : This paper presents a simulation framework for using machine learning techniques to determine robust robotic motions for handling deformable objects. The main focus is on applications in the meat sector, which mainly handle three-dimensional objects. In order to optimize the robotic handling, the robot motions have been parameterized in terms of grasp points, robot trajectory and robot speed. The motions are evaluated based on a dynamic simulation environment for robotic control of deformable objects. The evaluation indicates certain parameter setups, which produce robust motions in the simulated environment, and based on a visual analysis indicate satisfactory solutions for a real world system.

Keywords : deformable objects, robotic manipulation, simulation, real world system

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