Application of visual servoing for grasping and placing operation in slaughterhouse

In food industry due to the high variety of the object including the shape, size and structure the involvement of real time robotic system is limited compared to the applications of robotic systems in automotive industry. For completing operations within food industry it is generally necessary to contain dynamical adjustment to each target in the control loop. This work focuses on using visual feedback to capture information of each piece of work for robotic control. A grasping and placing operation is selected as a case study of using visual servoing in slaughterhouse. For detecting the location of the target the color information provided by a visual sensor is utilized. The control command for the robot is generated based on the real time visual feedback. An industrial robot arm UR10 is applied to complete the operation. A lab-scale experimental setup is constructed for system validation. The experimental results show that the proposed visual servoing system works well for the grasping and placing task in slaughterhouse. The system is implemented in ROS and can be easily extended to similar operation tasks using different hardware.