

## **Object segmentation for robot object manipulation using depth camera**

**Problem Statement:** Need ability for a robot to see an object on the floor, so it can be picked up. The solution needs to be optimized to run real-time (2-5 fps), in order to guide a robot hand to the object.

**Target Product:** Humanoid robot able to pick up objects and bring to humans (examples include recovering patients and elder care)

**Resources:** Intel will provide new Intel® RealSense™ depth cameras for this project.

**Suggested Approach:** PCL (Point Cloud Library) is recommended be used for determining the floor plane, segmenting the objects, filtering and sorting for proper size and closest object, and determining bounding box for picking the object up.

**Options:** If time permits, solution can be tied into ROS (Robot Operating System), and/or “MoveIt” library.

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