

# SMOOTHIE-BOT

Using Fetch for Gourmet Purposes

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# Why would do you NEED a smoothiebot?

- End goal: have robots integrated into domestic tasks
- Subtask of robots in the kitchen, not just pancake flipping robots
- Contributes to the 'on-the-go' culture proliferating in America

# The Ideal Smoothiebot

- Receives smoothie request
- Goes to the refrigerator
- Pulls out the fruit for YOUR smoothie
- Prepares fruit using actions like *cut, chop, peel*
- Puts fruit into blender
- Prepares smoothie

# Our Initial Plan

- Tier 1: Fruit identification
- Tier 2: Grasping fruits and moving them into blender
- Tier 3: Interacting with Fetch using voice for specific smoothie configurations

# Previous Work

- Goldberg et al. “Cloud-Based Robot Grasping with the Google Object Recognition Engine”
- Bollini et al. “Interpreting and Executing Recipes with a Cooking Robot”

## We attempted...

- To copy Goldberg et al. with PR2 and object recognition
- To use Google Cloud APIs for verbal commands

# Transitions, transitions....



\*surrender\*



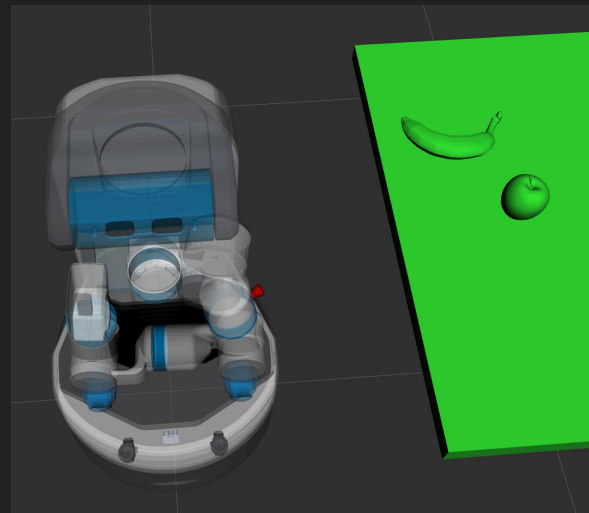
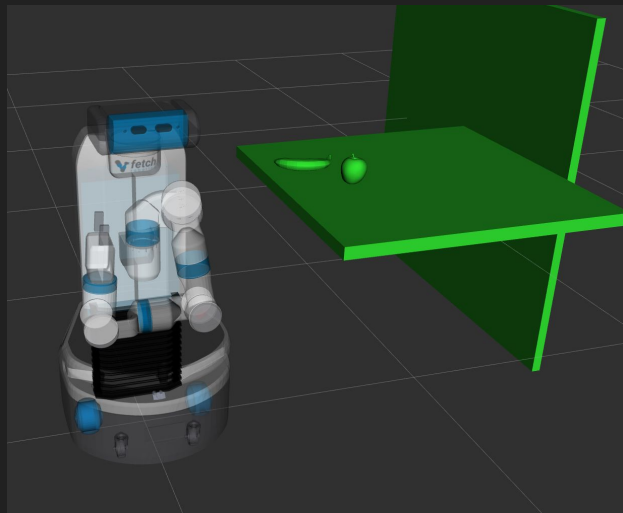
# We learned...

- Talk in rostopics and ros nodes not in English
- Image segmentation and object recognition are fundamentally the same task
- Useful adaptation of CRLab:
  - world-manager
  - curpp
  - alexa-ros-controller



# Accomplishments

- Accomplished:
  - Created custom Gazebo world with our own imported objects
  - Loaded fruit meshes into rviz at the positions of the objects in Gazebo
  - Had alexa-ros-controller receive commands for smoothie items



# Remaining Work

- We want to:
  - Grasp object based on its pose and move it to a new location
  - Set up alexa-ros-controller to interact with objects in Gazebo scene