



Mobile Manipulation Robotics in Bar Settings

BarBot

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OVERVIEW

With an increasing bar-going population, bartenders face the problem of spending time pouring the drink. We wanted to ease their work while ensuring that they can focus on customer satisfaction

SOLUTION

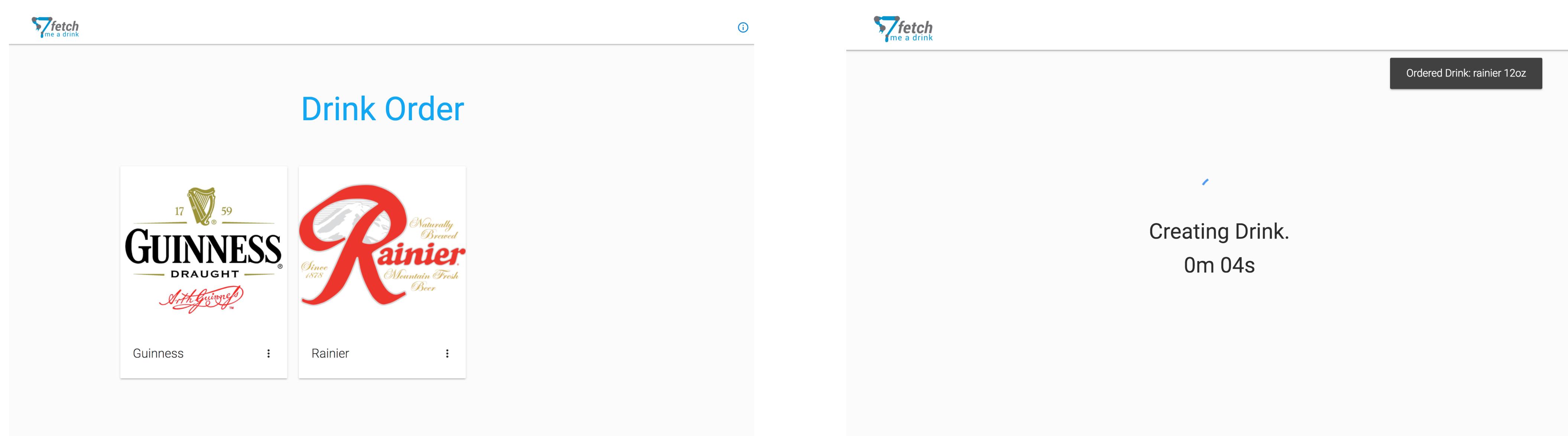
We're programming the robot to be a bar tender that can dispense beer from a tap, allowing bartenders more freedom to interact with customers and keep them happy.

TARGET AUDIENCE

The robot itself is meant to aid the bartender on shift so, upscale bars and bartenders are the primary audience. While the novelty would be for the customers of the bar.

FRONTEND

The frontend is built mobile-first with simplicity in design through material by Google. This is because our customers may be inebriated and may not have a traditional desktop available to order and so the design had to be error free.

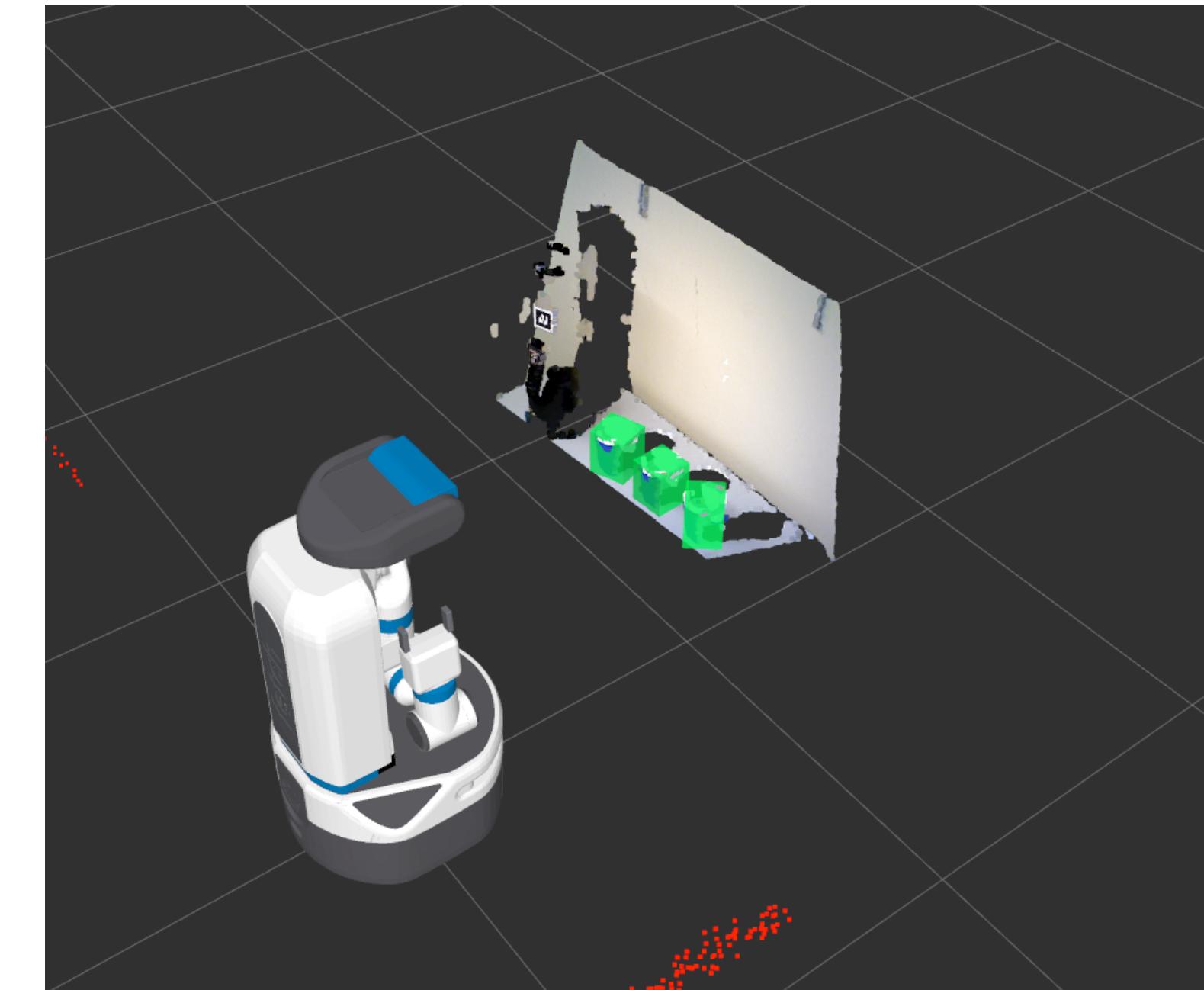
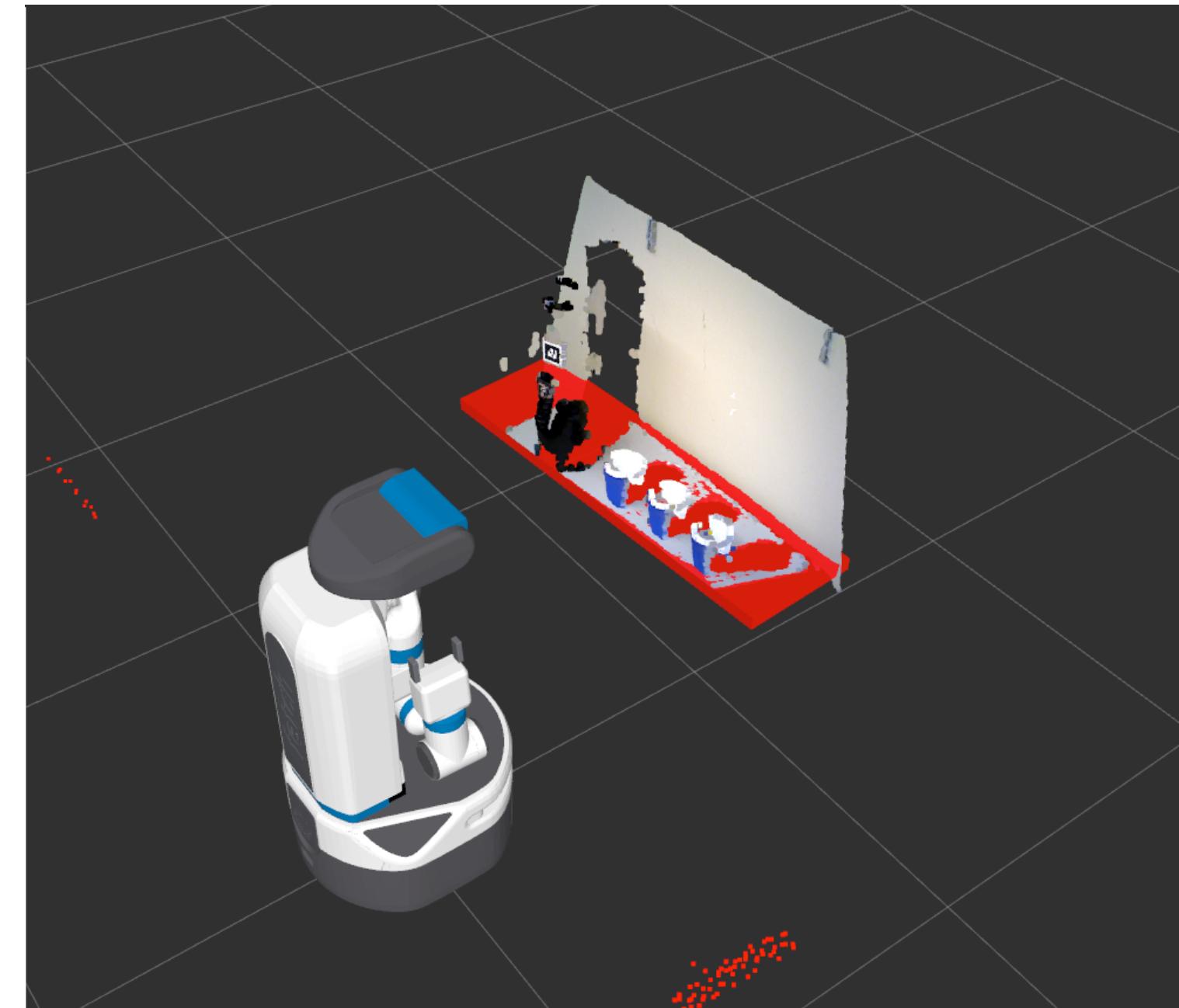


WEB APP

ANDROID APP

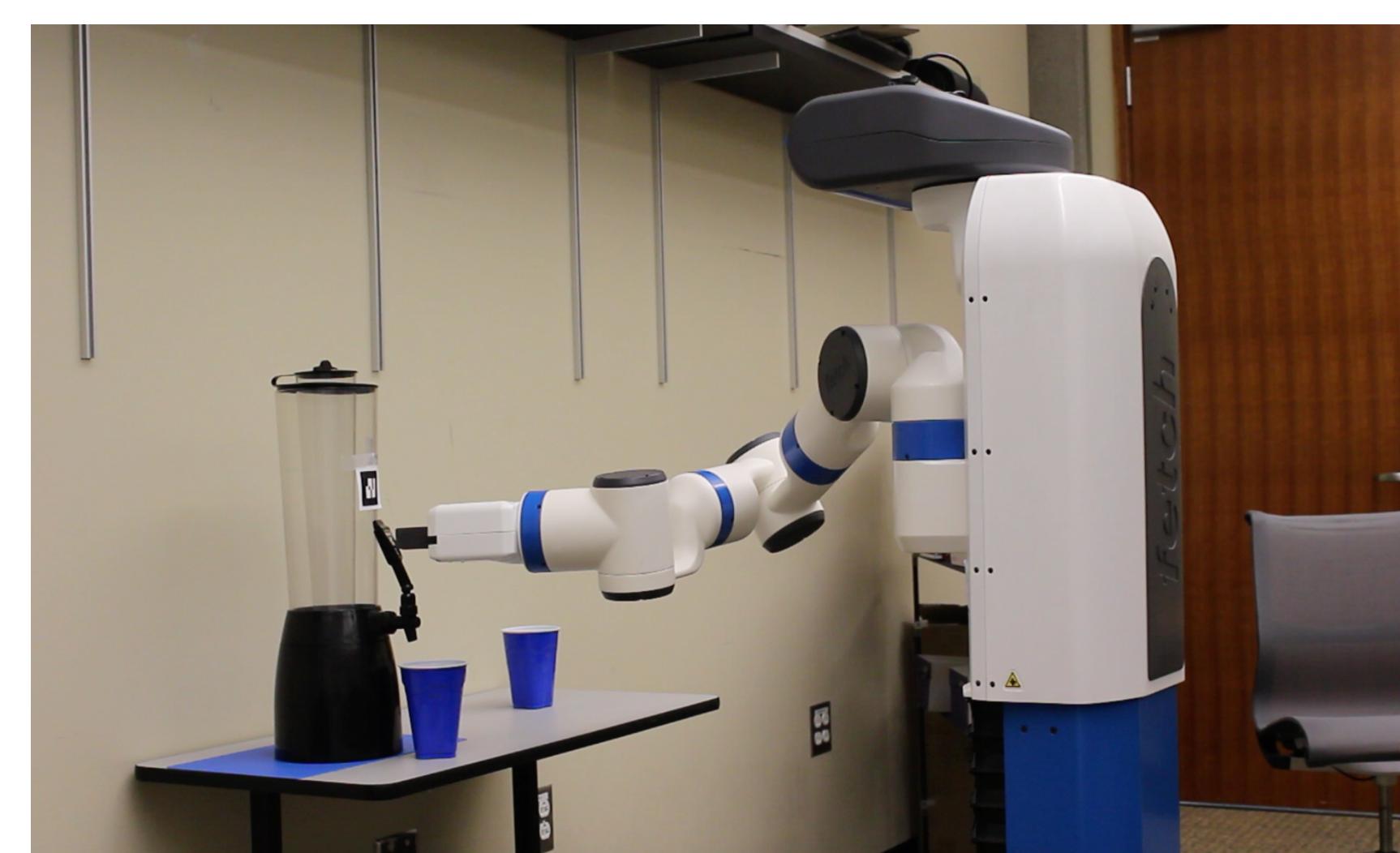
PERCEPTION

Perception helps the robot identify the cups on the table, giving it a position to reach and grab the cup. The algorithm segments the surface using RANSAC and identifies objects above the surface. The robot then recognizes the surface as the table and uses thresholds to group objects above the table as cups.



Perceiving cups and tables in rviz the 3D visualization tool

MOTION and NAVIGATION



Motion and navigation help manipulate the behaviour of the arm and the base, allowing it to move around the designated bar areas, as well as using values from its perception to grab the cup and place it under the dispenser. By programming through demonstration, the robot learns to perform actions.