Automated Bartender

The Automated Bartender (AB) provides a timely and economical means of making and delivering drinks to customers. With a rotating platform and cup detectors, the AB, unlike similar products on the market, can handle a queue. The AB utilizes a gravity fed solenoid valve to control the delivery of the liquid. The flow sensor, in line with the valve allows for precise measurements. We have implemented a calibration technique in the software to ensure consistent and accurate flow count.

System Overview

We implemented an analog PI controller on the PCB to control the position of the rotating platform. This gives us accurate control over the platform and ensures that we can center the cups below the liquid dispenser. In each position, we have a cup detector that consists of an IR emitter detector pair. The detector ensures that cups are in the right position before allowing the valves to open, preventing spilling from occurring.

The Bluetooth module allows us to send and receive serial data to and from our Android device. Our Android application transmits commands through Bluetooth to the microcontroller. It allows us to control the position of the platform and allows us to select our desired liquid and the desired amount of that liquid.

Rotating Platform

By allowing multiple cups to be in place in the platform the user can request multiple beverages at a time. A PI controller allows us to precisely place the cup in the five different positions. We have cup sensors beneath each position to ensure a cup is in position to be filled and to track the beverages.

Continued Development

There are very few automated bartenders on the market today and they are all very expensive. Some only handle a couple of beverages. None can handle a queue, until our AB. With all of the capabilities of the AB, our intent is to continue developing the AB into client specific models.

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