

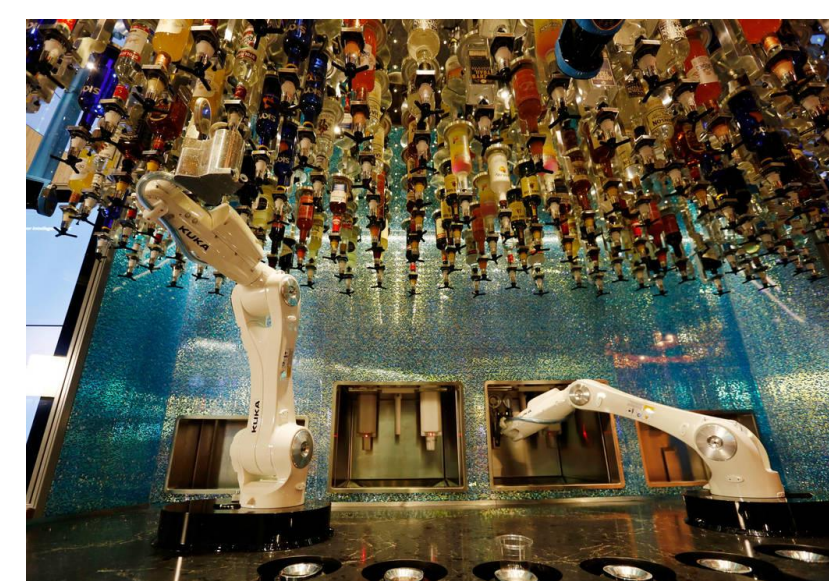
BarBot: An Automated Cocktail Maker

MOTIVATION & BACKGROUND

- Having experienced slow service at crowded Rutgers bars all too often, we wondered if there was a way to expedite the drink-making process, with the aid of a robot
- While solutions exist, most are extremely expensive and/or occupy a large surface area
- Our solution aims to create some of the most requested drinks, reducing wait time for most customers



Current Solutions



GOALS & DESIGN OBJECTIVES

- Build an automated cocktail making machine that is low cost (< \$300), scalable by design, precise and accurate in its pouring, and faster than the manual approach. The machine must be small enough to be placed on a tabletop
- Create a visual interface, using an LCD screen, for users to select a cocktail from a predetermined drink menu
- Design Objectives:
 - Simultaneously dispense liquids from multiple bottles into a singular vessel
 - Dispense the correct amount of liquid within 5 -10% tolerance
 - Select the cocktails in a user-friendly manner



LCD Interface

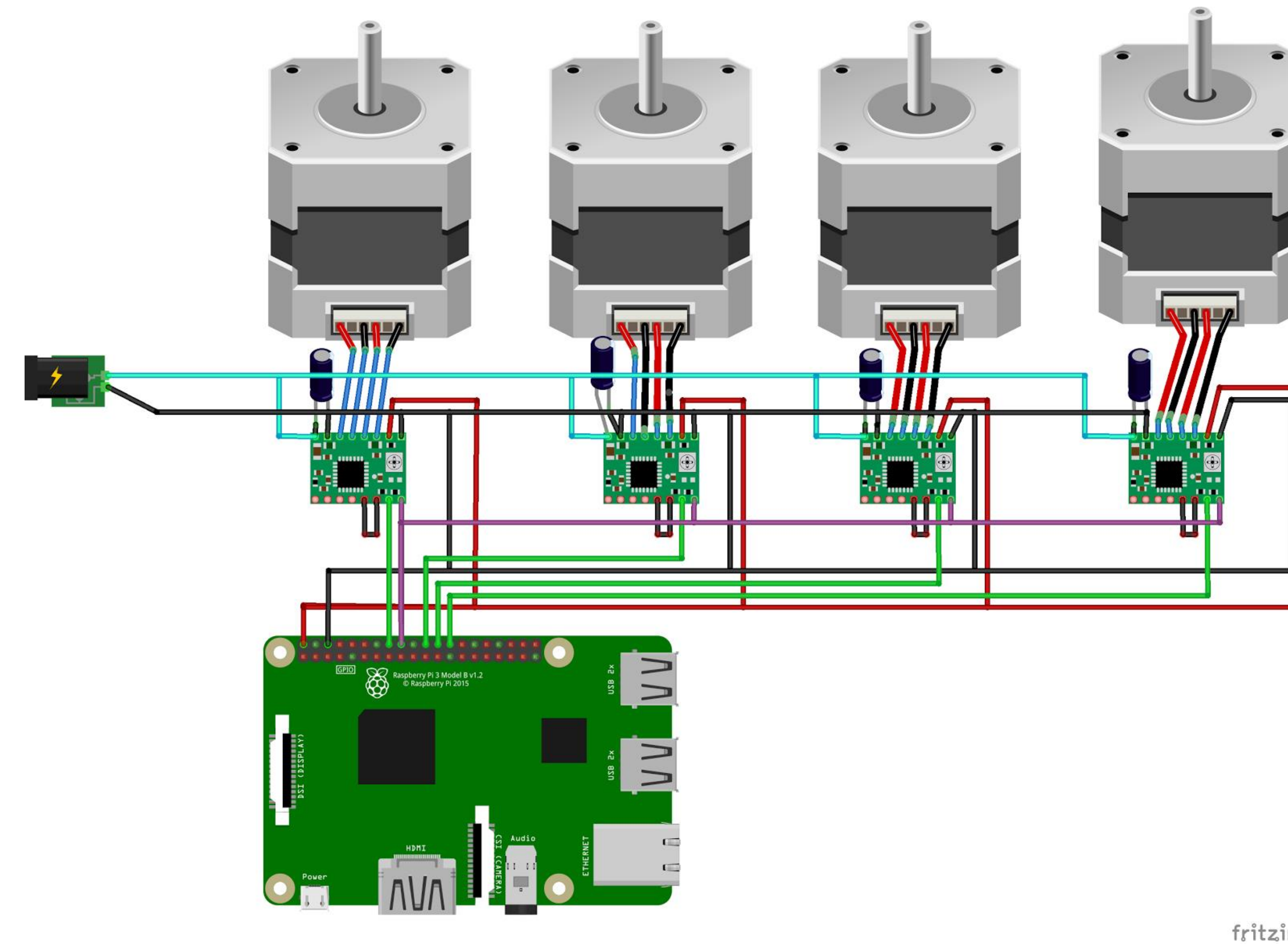


Reference Size for Apparatus

ACKNOWLEDGEMENTS

We would like to thank our advisor, Prof. Hana Godrich, for guiding us with insightful feedback and suggestions

METHODOLOGY



- Determine the most requested drinks and average number of ingredients associated with them
- Determine the optimal number and type of pumps, while adhering to the budget
- Develop the hardware/software for the pumping subsystem and its controller
- Build the physical encasement

RESEARCH CHALLENGES

- Designing a system and selecting hardware to optimize speed and accuracy of the pouring, while on a limited budget
- Developing the codebase for the control mechanism of the pumping sub-system, using Raspberry Pi, so that it confines to the fixed tolerance of excess fluids
- Constructing the physical encasement for the apparatus

FUTURE WORK

- In the future, we hope to build iOS/Android apps for an improved user experience and swifter selection times. The app would also suggest new recipes and the estimated time to make a particular recipe
- An alert notification when a particular bottle is low in volume

REFERENCES

- <https://tinyurl.com/ycw8stu4>
- <https://tinyurl.com/yb6aawfr>
- <https://www.raspberrypi.org/documentation/>