ME 604 Robotics: Project Proposal
TOSSBOT

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Introduction:

There is an imminent need for automation in this modern age. This is possible with the help of robots, which can perform many complex tasks.
We derive inspiration for this project from the popular mobile videogame, Paper Toss. In this game, the user is supposed to swipe in a particular direction to combat wind speed and throw the paper ball in the bucket.
We aim to create a tossing robot which takes into account the position of the bucket and tosses a ball such that it lands in it, by adjusting its joint angles and velocities.

Tasks to be Accomplished by the Bot:

The tossing robot is supposed to take into account the coordinates of the bucket (which we aim to obtain using a simple camera) and adjust its joint angles and velocities in order to pick the ball from its initial position and launch it in order to make it land inside the bucket. The coordinates of the bucket will be changing (within the plane) and there will be a feedback mechanism established to enable accurate pick up and drop of the ball.

Requirements:

1. 4 servo
2. Arduino (UNO)
3. Acrylic (A lot of it)
4. Small soft balls
5. Small Bucket
6. Nuts and bolts (M3)
7. Camera (Probably phone)
8. A computer
9. Serial Cable (for taking inputs from the computer)

Future Prospects:

A possible variable that could be added to our problem is the wind speed. The wind speed is an important factor in real life applications and the robot could have a feedback system in place that estimates the end effector velocity required to combat this wind speed.