

Project Title: **DogeFetch**

Team: *Jessica Lin, Varun Rau, Wonjun Jeong*

EECS 149/249A Project Charter, Fall 2014

Project Goal

This project will create an automated dog toy that keeps a dog entertained on its own by throwing balls in the opposite direction of the dog.

Project Approach

The project will use a state machine governed by two main sensor inputs - a sensor for detecting whether a tennis ball has been inserted and a sensor for detecting the position of the dog relative to the robot. The goal will be to detect the insertion of a ball, detect the location of the dog, and throw the ball in the opposite direction of the dog. It would remain inert until the next tennis ball insertion.

Resources

Our plan is to use the Arduino Uno as the processor core driving the robot's movements. We will plan on using this to interface with a [Vernier Sensor Motion Detector](#) that will be able to detect the movement and position of the dog. For detecting the insertion of the tennis ball, we plan on using a [Flexiforce Pressure Sensor](#) to detect the weight of the inserted ball. The launching device will be able to rotate using a [Digital Continuous Rotation Servo](#) that will rotate to the opposite direction of the dog, at which point a switch will activate the launch of the ball.

Schedule

- October 21: Project charter due
- October 28: Statecharts simulation model with logic and timing for controller
- November 4: Project review with GSI
- November 11: Installed software for development, basic servo control
- November 17: *Mini project update*: demonstrate motion detection and servo control
- November 25: Motion detection of dog should activate rotation to opposite direction
- December 2: Actuation in response to ball insertion, timing of actions measured
- December 9: System testing, measure false positives, assess timing effectiveness
- December 16: Demonstration video made, powerpoint prepared
- December 17: Final presentation and demo
- December 19: Project report and video turned in

Risk and Feasibility

The motion detector could detect ambient motion. The robot could be destroyed by dog.