Elephants and Friends

Exploration of Introductory Level Furry Robots | Fawn Qiu

Goal

To create an introductory-level robot that's more familiar and appealing to people

Future: to develop instructions and kit so others can also make this robot

Various inputs are used to introduce different types of outputs

Input	Output
Capacitive sensor	Servo moves elephant ears
	Buzzer motor in the tail
Light sensor by nose	Servo moves elephant nose and feet
Magnet/ reed switch	Red LED fades on and off
Tongue (pressure sensor)	Microphone

Goal

To create an introductory-level robot that's more familiar and appealing to people

Future: to develop instructions and kit so others can also make this robot

Creating the body

- They body is made using wood, cardboard could be another substitute

- Many trials were run to make a press fit box in order to allow for flexibility, but it was not ultimately used due to time
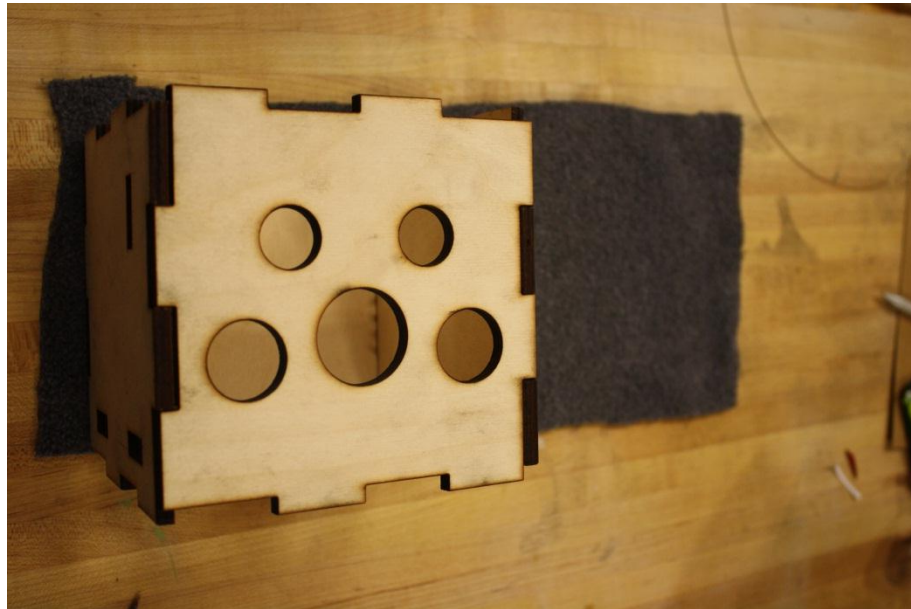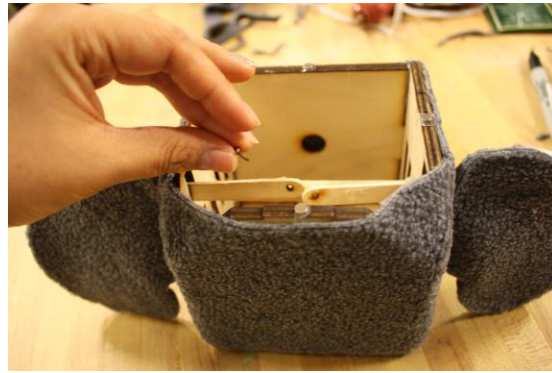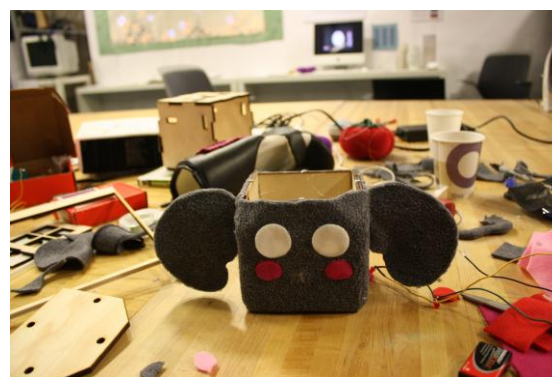
Creating the body

Felt is hot glued around the wood base to create the skin for the robot, magnets were hot glued to close the top piece

Creating the Body
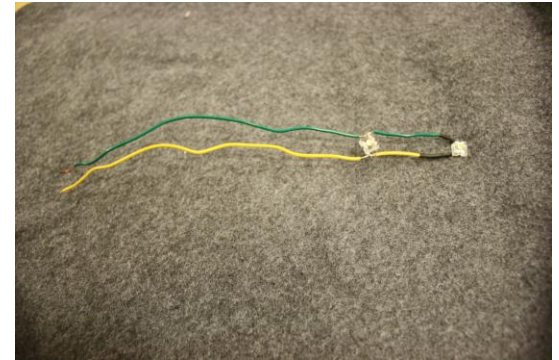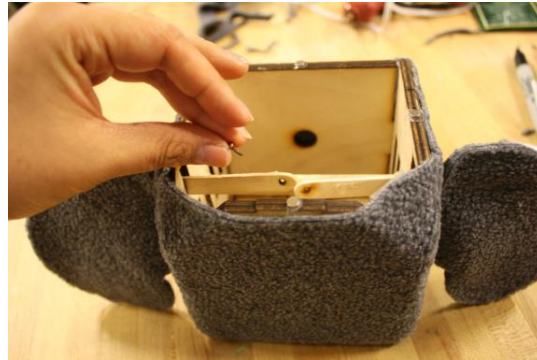
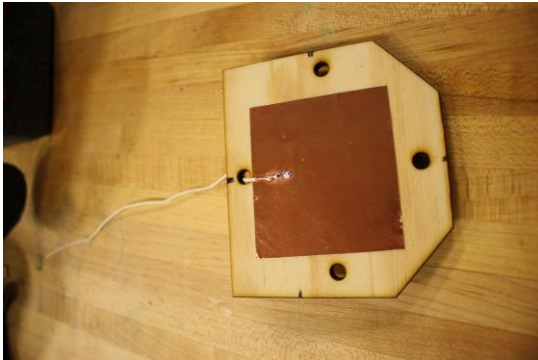- Create the ears, tails and nose using felt pieces

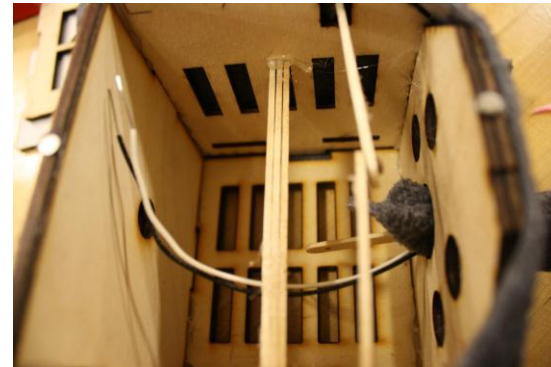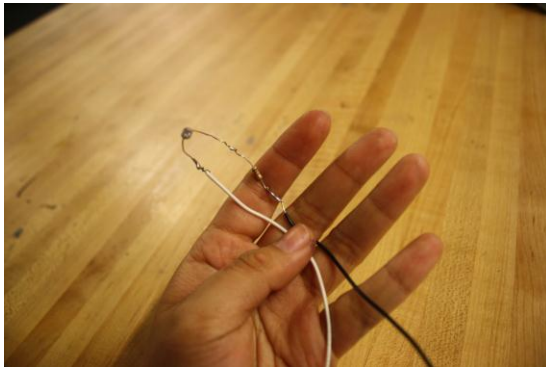- Cover the top piece and decorate the eyes and face with felt

Capacitive sensor

- The top piece is also a capacitive sensor, it controls the servo motor (http://arduino.cc/playground/Learning/SingleServoExample), which moves the ears and light up the eyes,

Photoresistor

- Connected it with a 10 k resistor
- http://www.arduino.cc/playground/Learning/PhotoResistor

- Triggers servo and dc motor
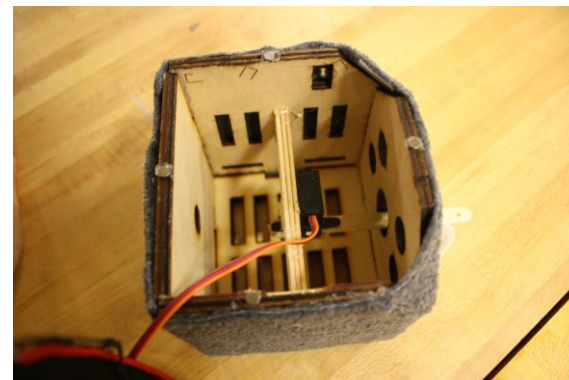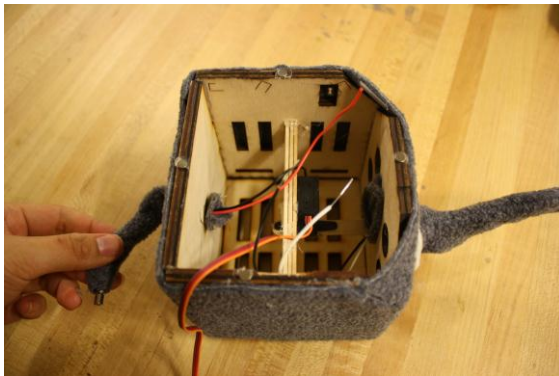
Photo resisor

- 10 k resistor http://www.arduino.cc/playground/Learning/PhotoResistor

- Servo motor
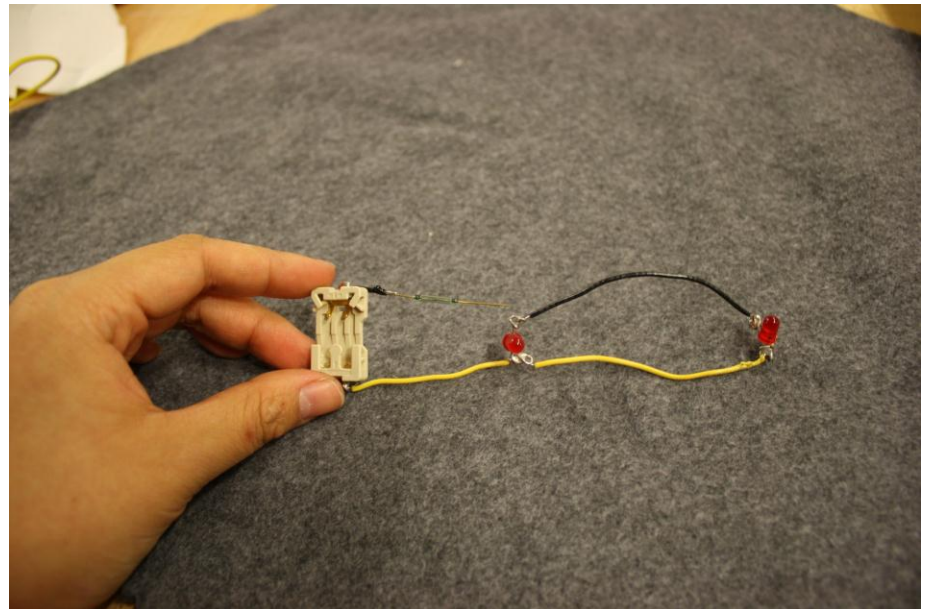
http://arduino.cc/playground/Learning/SingleServoExample
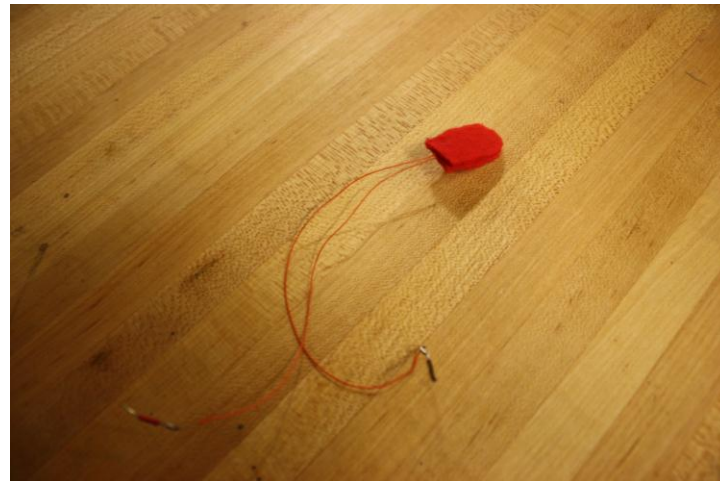
Capacitive sensor

Reed Switch

- A separate circuit containing a reed switch is used, a reed switch becomes connected when magnetized
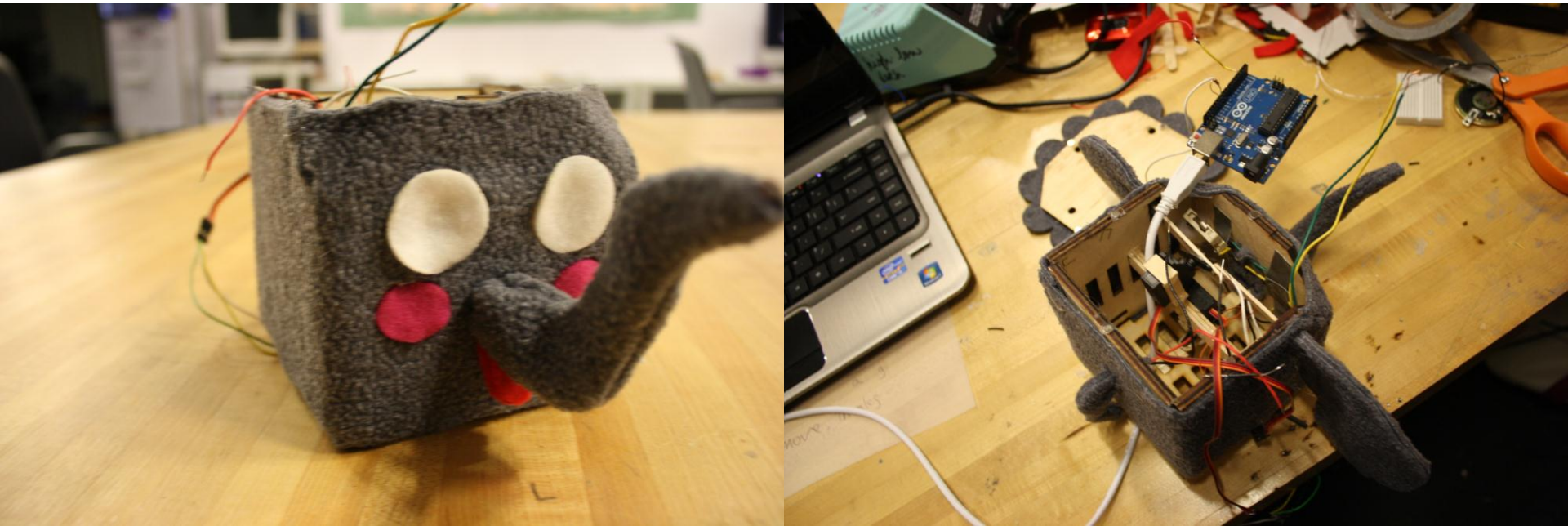
Pressure sensor

- A simple pressure sensor is made using wires, velostat, tape, and felt
- The pressure sensor triggers the microphone inside the elephant

Putting it all together

Challenges and learning

- Wiring was the most challenging
- Other challenges: variable sensor values, working with servos, coding
- Learning: great resources and documentation online