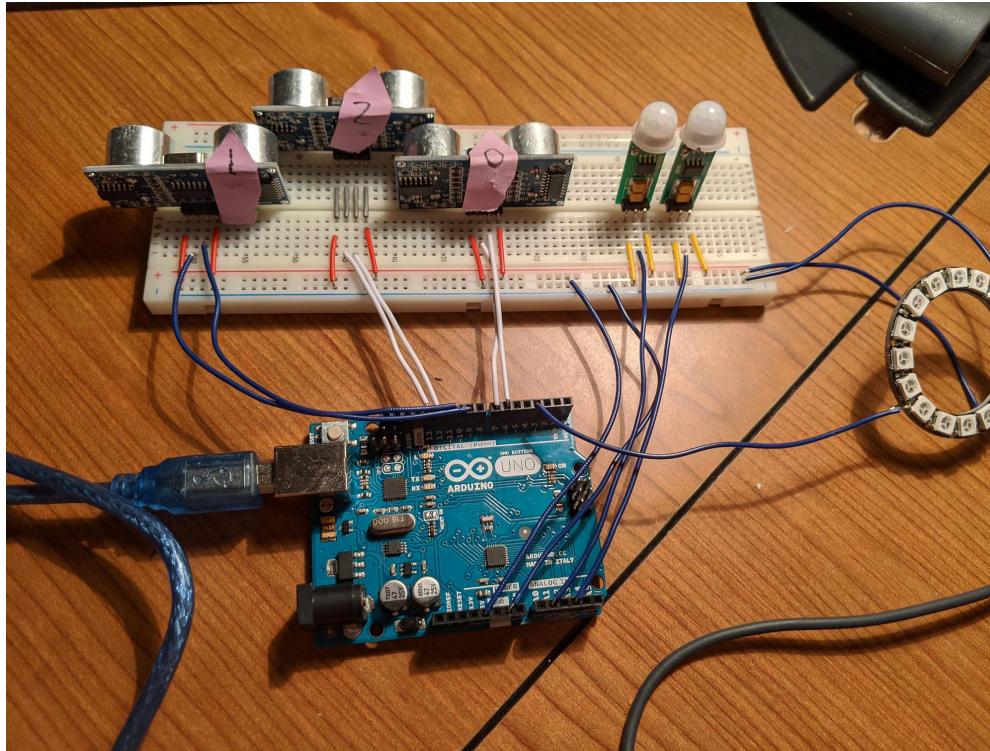


Basic Circuit



Original planned circuit with 3 ultrasound proximity sensors, 2 PIR sensors and neopixel indicator.

Serial Monitor Displaying Sensor Readings

The screenshot shows the Arduino IDE interface. The top menu bar includes File, Edit, Sketch, Tools, and Help. The main window displays a sketch titled "Prototype2". The code in the editor is as follows:

```
// Sine wave, 3 offset waves make a rainbow.  
168 //float level = sin(i+Position) * 127 + 128;  
169 //setPixel(i,level,0,0);  
170 //float level = sin(i+Position) * 127 + 128;  
171 setPixel(i, ((sin(i + Position) * 127 + 128) / 255)*red,  
172     ((sin(i + Position) * 127 + 128) / 255)*green,  
173     ((sin(i + Position) * 127 + 128) / 255)*blue);  
174 }  
175 showStrip();  
176 delay(WaveDelay);  
177 }
```

Below the code, the status bar indicates:

Sketch uses 8976 bytes (27%) of program storage space. Maximum is 32256 bytes.
Global variables use 285 bytes (13%) of dynamic memory, leaving 1763 bytes for local variables.

To the right, the Serial Monitor window is open, connected to COM5. It shows the following sensor data:

Sensor Type	Value 1 (cm)	Value 2 (cm)	Value 3 (cm)
lfront0back	2cm	13cm1	109cm2
lfront0back	15cm1	16cm1	108cm2
lfront1back	15cm1	15cm1	112cm2
lfront1back	9cm	16cm1	107cm2
lfront1back	20cm	15cm1	107cm2
lfront0back	0cm	15cm1	107cm2
lfront0back			

The Serial Monitor also includes settings at the bottom: Autoscroll, Show timestamp, Newline, 9600 baud, and Clear output.

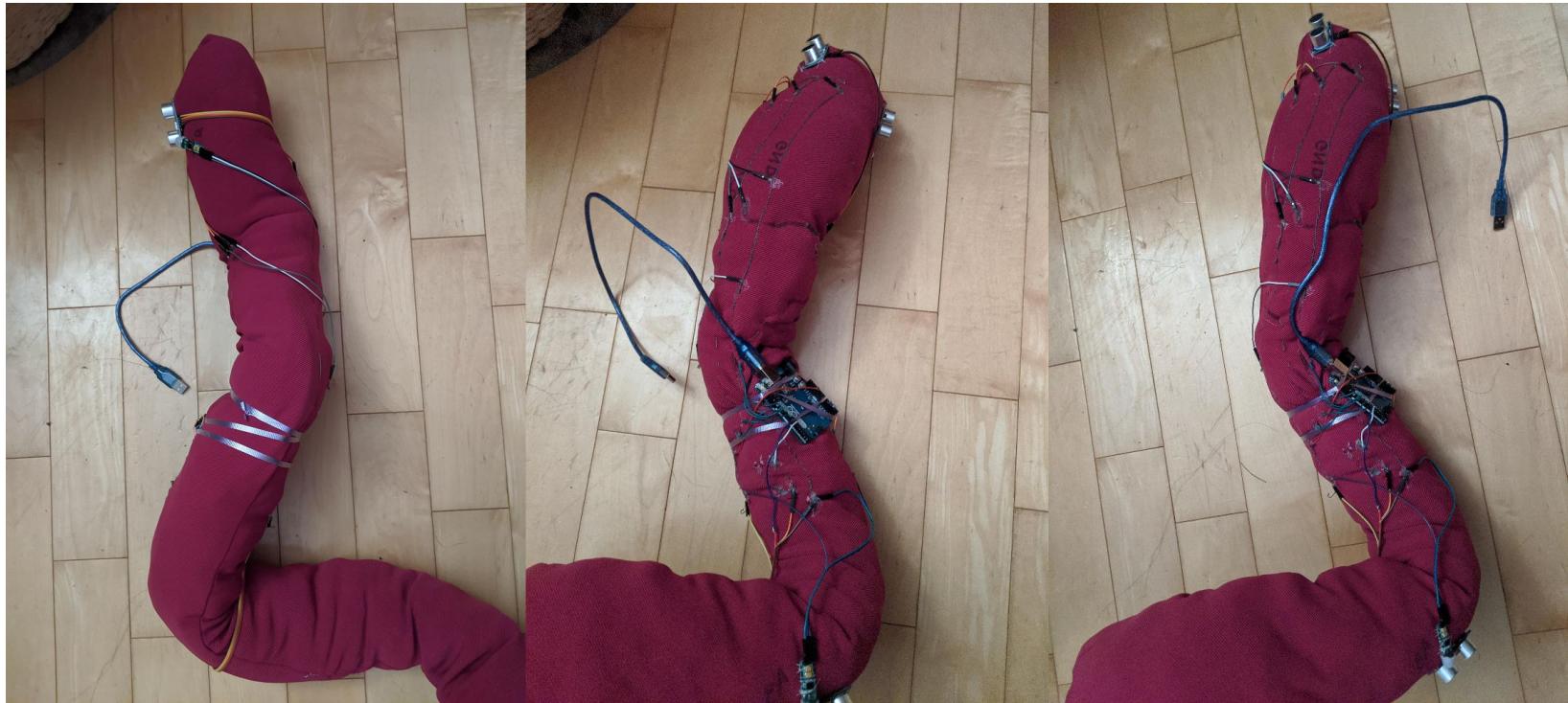
cm being the tail sided (removed) sensor, cm1 front eye and cm2 back eye. “Front” and “back” are PIR sensor values.

Progress



Progress shots of the circuit as it got more complex. Overlapping lines were spaced widely and sewn in deep to avoid crossing. Arduino secured to creature with

Finished Circuit



Complete circuit, minus neopixel rings which have to be installed last because they are outside the skin.

Finishing Up



Creature with skin on, “eye”holes for sensors to function. Zipper installed on the tail for removable and rechargeable power source.

Final Artifact



Decorated, finalized creature is finished.

Various Detail Shots

Decorated with the idea of an imaginary friend in mind. Sensor blended into fur. (Not entirely successful) 3D printed heart with ring inside.



Creature in Action P.2



Different camera brightness and colour states. Photos are somewhat difficult to take because of the black body, colour and light balance.

Videos:

Light pattern behaviour on breadboard

<https://i.imgur.com/dKz7U0w.mp4>

<https://i.imgur.com/4TVfp0C.mp4>

On artifact

<https://i.imgur.com/3pl5u4a.mp4>

<https://i.imgur.com/Ayjf7tO.mp4>

<https://i.imgur.com/4YjWjlF.mp4> (Less delay between changes)

Final product

<https://i.imgur.com/4j737uN.mp4>

<https://i.imgur.com/dDNsATf.mp4>