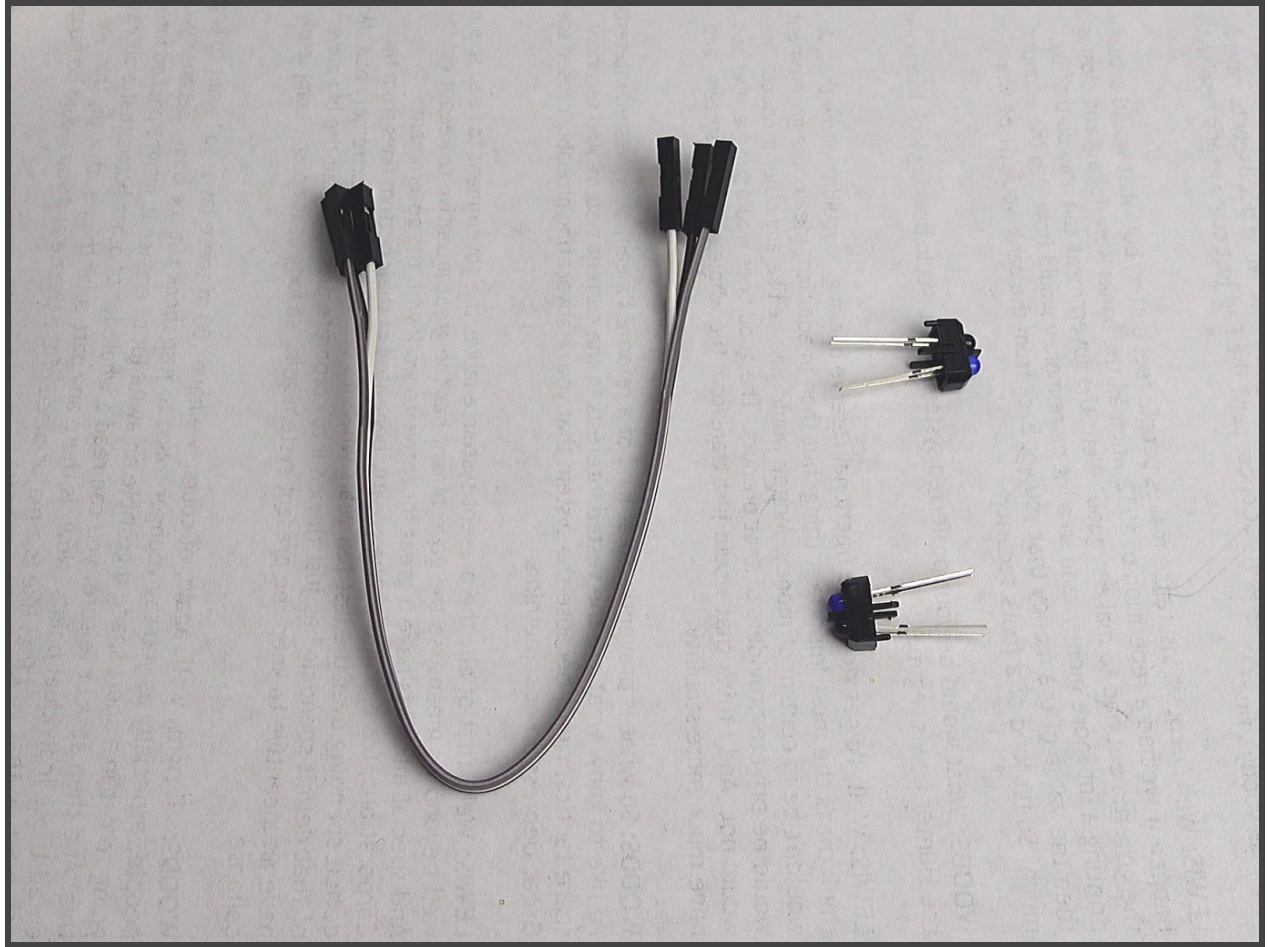


ProtoBot IR Sensor Soldering Guide



You will need:

Parts:

- 2 x IR Sensors
- 1 set of two DuPont Female-Female jumper wires

Tools:

- Wire cutters/Strippers
- Soldering Iron with Fine tip
- Helping Hands, or something to hold the bump sensors in place (I used tape)



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- Use your wire cutters to cut the set of jumper wires in half



- Strip about 5MM or 1/4" insulation off the wire ends

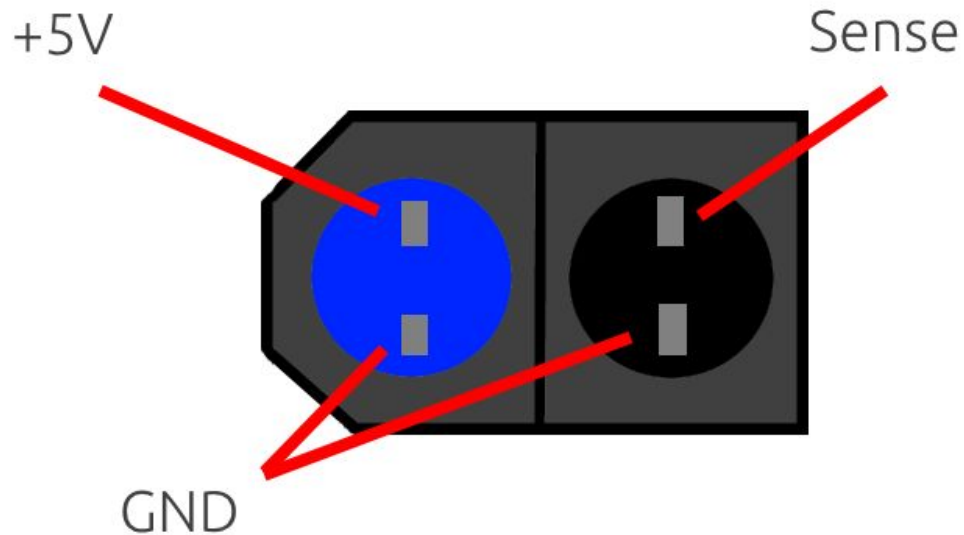


- Tin the wires by holding them on top of the solder, then apply your tinned iron

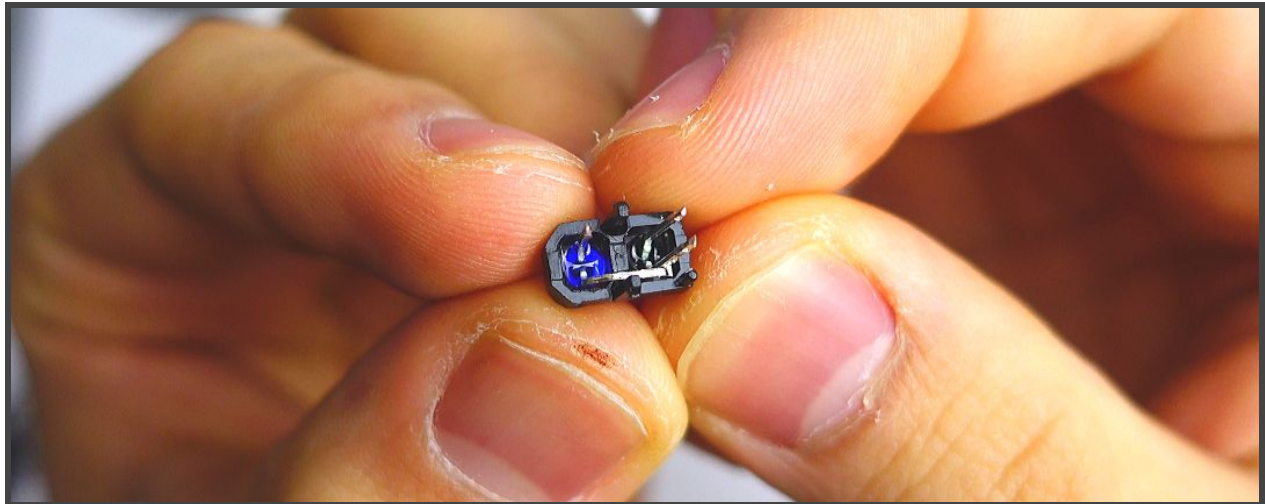


- Use your wire cutters to cut most of the leads off the IR Sensors, leaving about 5MM or 1/4" leads exposed from the plastic sensor body

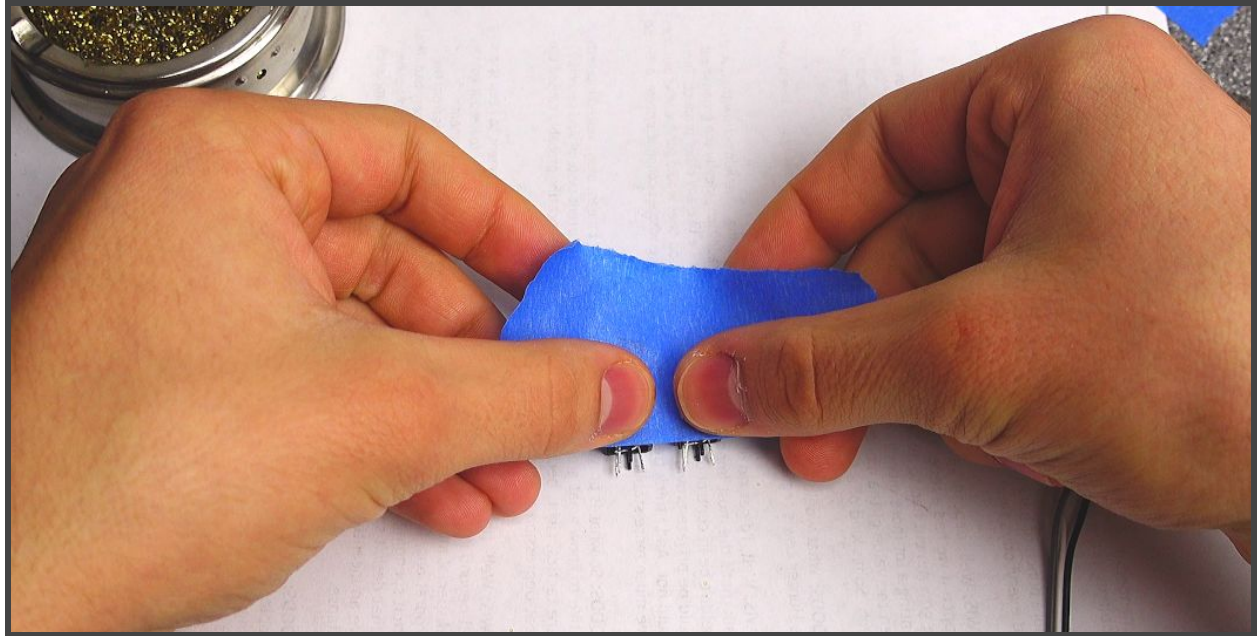
TCRT5000L IR Sensor - Pinout from Underside



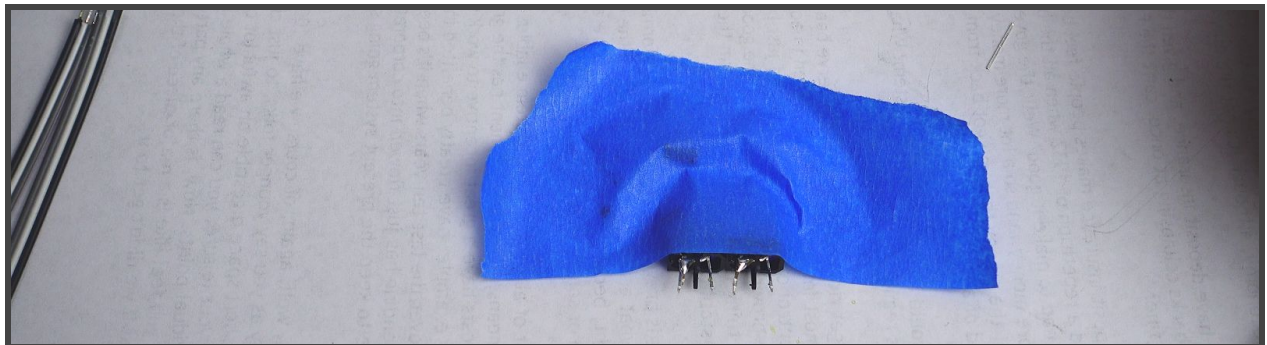
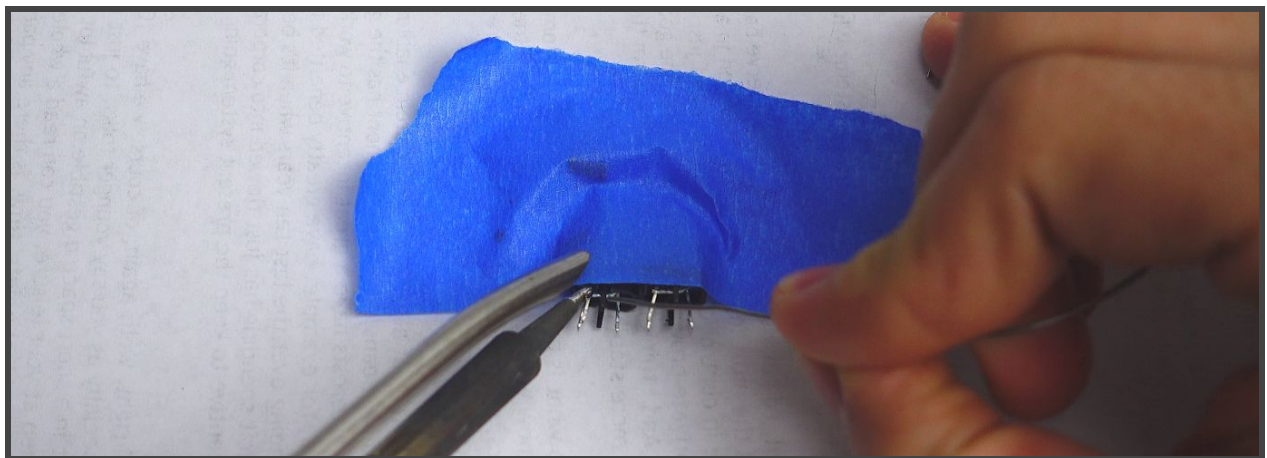
To use the sensor, connect both GNDs to Ground, then connect +5V to 5V through a 220ohm resistor. The sense pin connects to an analog Read pin on your micro-controller, with an additional 10K resistor between that and 5V. The higher the returned value, the less light is being receiving by the receiver.



- Orient your sensor as shown in the diagram above
- Bend the GND lead of the blue IR LED over to touch the GND lead on the black receiver LED.



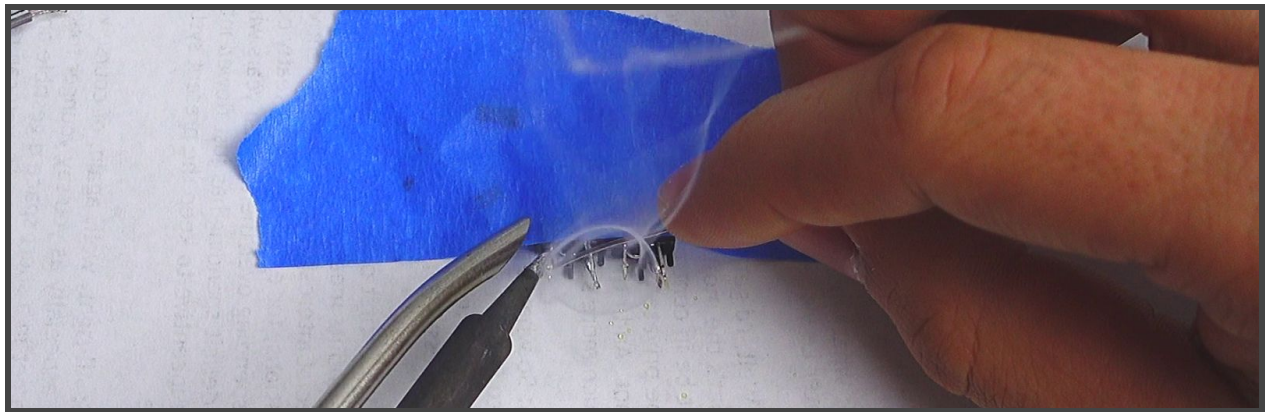
- Secure the IR Sensors somehow



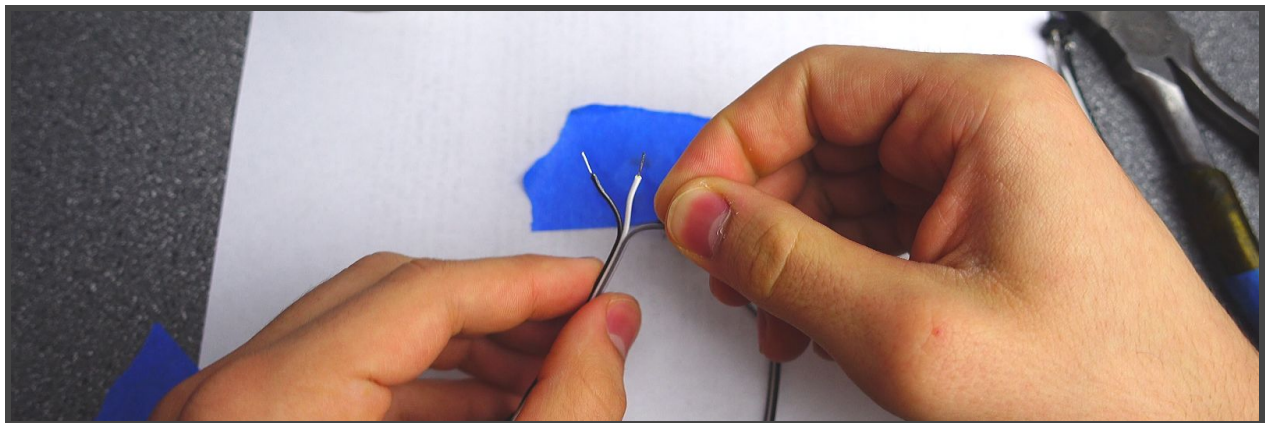
- Solder the GND pins together, so they make a good electrical connections



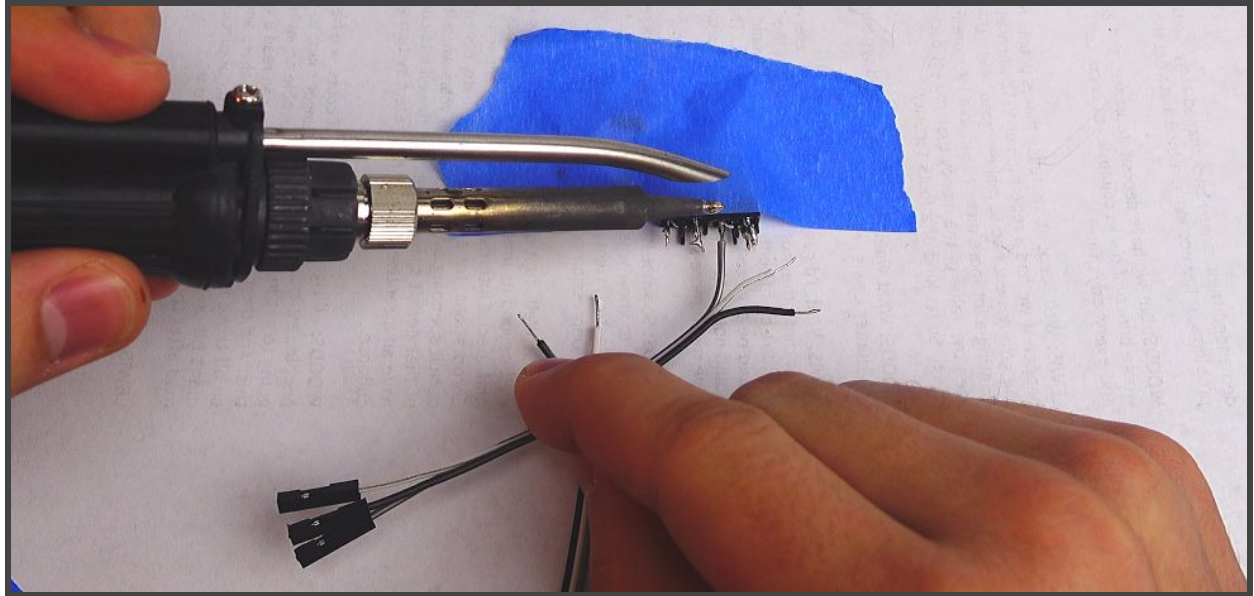
- When you're done, your sensor should look like this.



- Flip the sensors over, and tin the pins on the opposite side.

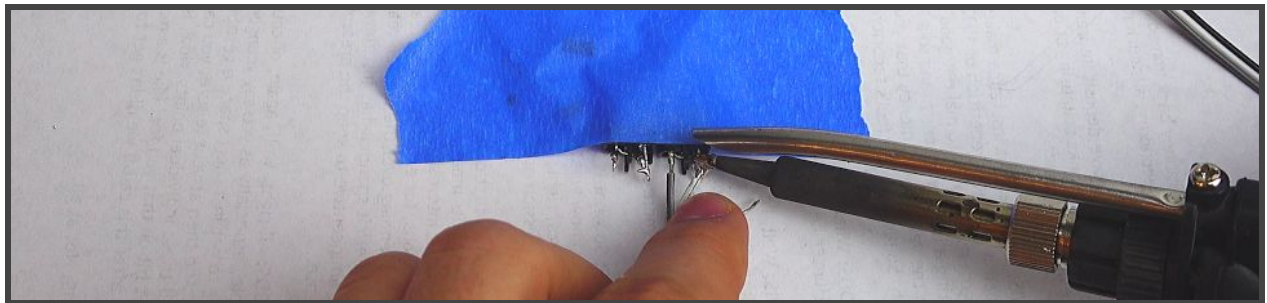


- Separate the ends of the tinned wires

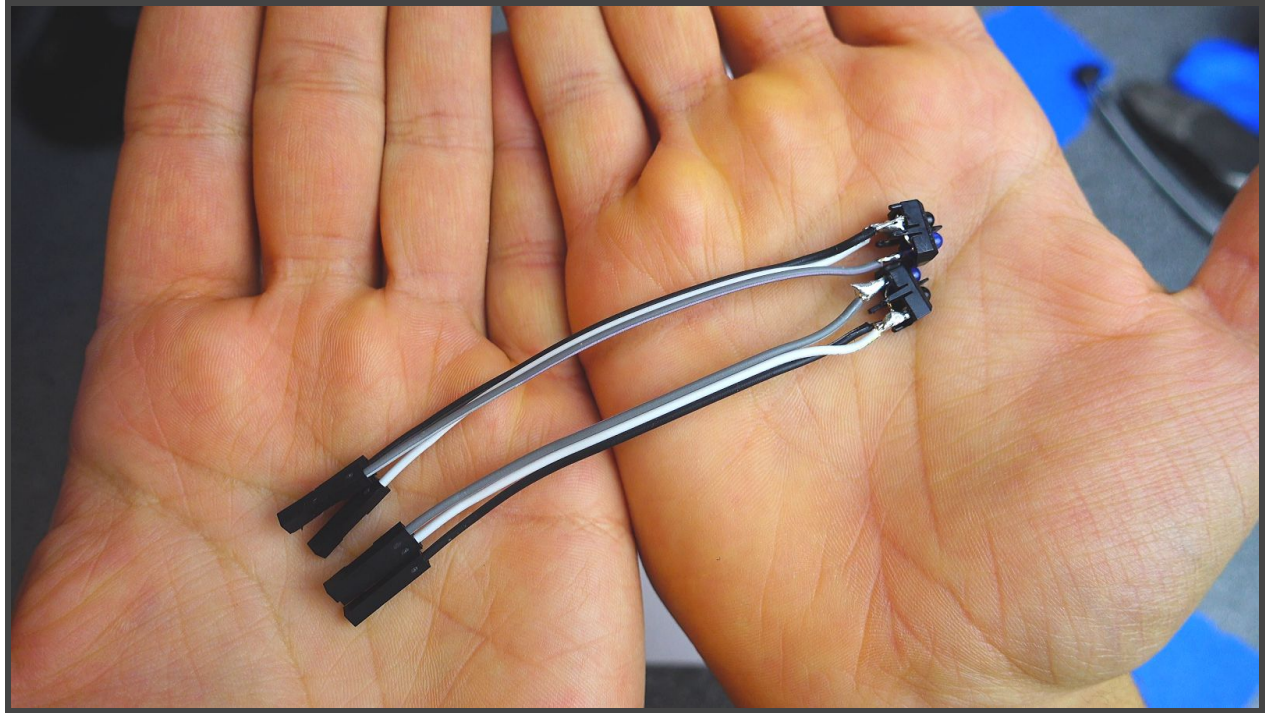


- Beginning with the GND pin, solder the wires to the pins.

Note: Since DuPont wires are randomly colored, it's hard to keep a color convention. I usually try to use the darkest wire on the end as GND, then solder them in order.



- Solder the other two wires, then remove the sensors



Your IR Sensors are ready to use on your ProtoBot!