Lie Detector with an Arduino

In this project we'll create a lie detector using the Arduino and some basic materials (Not guaranteed to work 100% of the time)

We'll be making a galvanic skin response (GSR) device. The GSR device measures the conductance of your skin. When you are nervous, under stress or in pain, your skin sweats very slightly, thereby increasing the conductivity.

Aside from your Arduino you'll need :

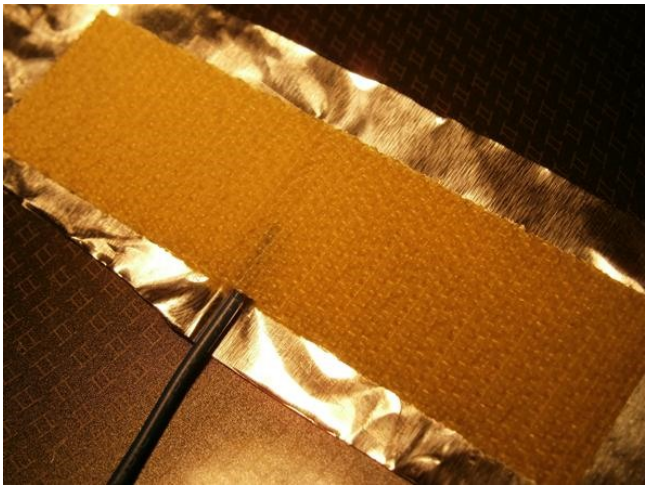
- Arduino
- Aluminum foil
- Velcro
- Wire
- 10k resistor
- Breadboard

Make the Electrodes

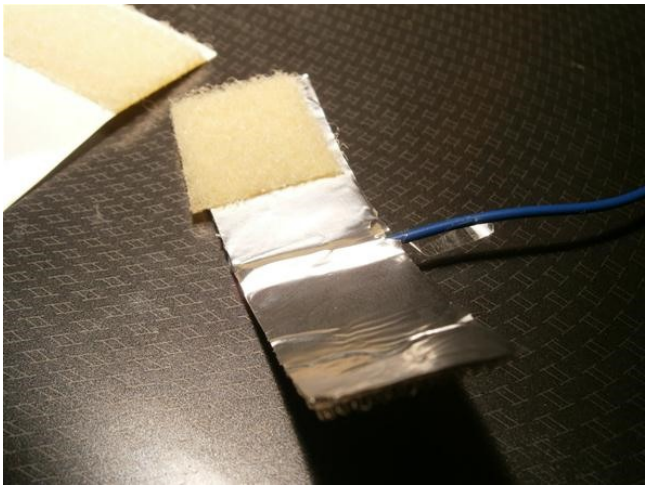
GSR machines require an even and consistent connection to the skin in order to function properly. To keep surface area and pressure constant, we'll make tin foil electrodes to wrap around two fingers of the user

Begin by taping the exposed end of a wires to a sheet of foil.

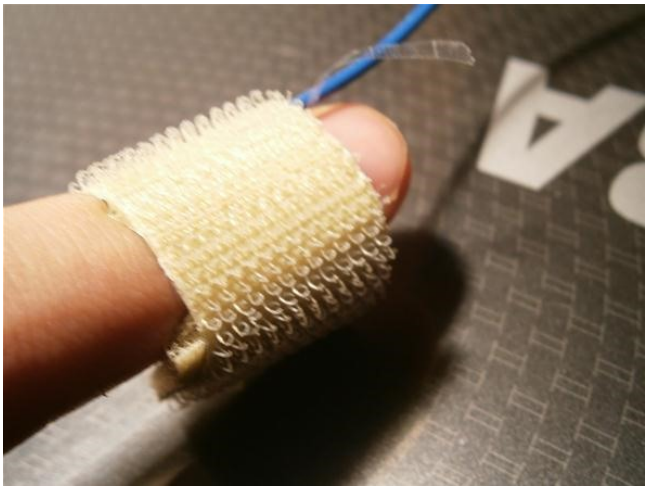
Adhere a strip of Velcro over the tape and cut off the extra foil.



Add a single piece of Velcro at the end of the foil side. Be sure you are using the right side of the Velcro sheet

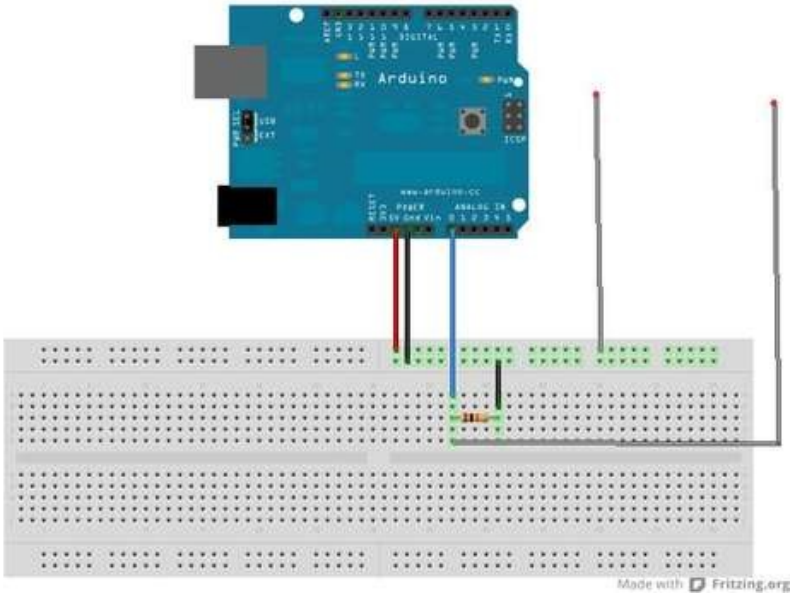


Now you have an electrode that wraps perfectly around your finger.



Wire the Circuit

The schematic for the wiring is as follows :



We are essentially making the finger electrodes into an analog input. The grey wires represent the finger contacts. The resistor has a value of 10k ohms.

Note that the sensors are connected to analog input 0 on the Arduino.

Load the Code

We'll use the example "Graph" code that comes with the Arduino software - **File>Examples>Communication>Graph**

This program takes the analog values coming from the skin and sends them to be graphed so we can see them change over time.

Load the code onto the Arduino and put on the finger electrodes.

A graph should pop up. The height of the graph line represents the conductivity of your skin. The higher the line, the higher the conductivity, the higher likelihood that you are lying.