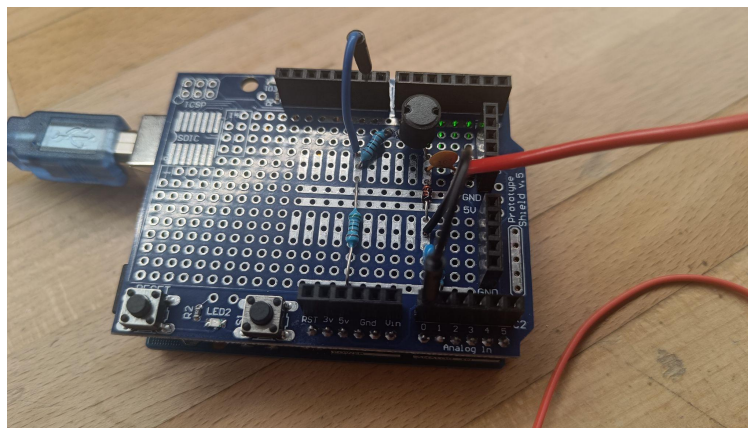


## Capacitive Plants

For my project, I have developed an interactive installation that uses capacitive touch sensing to allow users to interact with an ambient soundscape. By immersing themselves in their surroundings, visitors can explore the relationship between the physical and audible worlds. The sensing mechanism I'm utilizing is through plants, which register human touch via capacitive sensing. The touch data is then processed in Max MSP, where the accompanying music has been composed. The project explores Disney's Touche capacitive sensing technologies. Touche uses swept frequency capacitive sensing that not only recognises touch but can also be used to recognise complex configurations. I have seen many projects using this alongside machine learning to recognise gestures, however, I wanted to try and apply this type of technology to my own practice. After prototyping the device on a breadboard I decided that I wanted to build myself a shield for my Arduino so that I could use it as a portable device. The schematics for the circuitry were very simple to follow and readily available. Below is an image of the finished shield (red wire attaches to the object).



Most of the data manipulation is done within max msp, apart from some filtering on the data before being sent. I chose to compose my audio in max msp as it is easy to interface with and visually represent data. The data from the Arduino is sent via serial as an array of 160 values. I used serial communication as I was only sending data one way, and as the data was small this seemed to be the quickest and easiest approach. In max msp I am taking the first 60 values and plotting them to a graph. The shape and behaviour of the data drastically varied from the prototype to the shield. With the prototype, my data followed the same pattern as previous examples, following a peak point along a graph. However, once I soldered the Arduino shield the data became a lot more jittery and sparse. As the data is being processed as a list I could use it to control parameters on equalisers or pitch plotters as well as triggers when thresholds were met. I used the median and average values of the list for this too. I tried to make the music sound organic whilst still latching onto the digital clicks and textures to highlight the relationship between the physical and the electrical. I would like to expand this project to use more sensors and maybe different mediums to control a whole symphony of instruments.