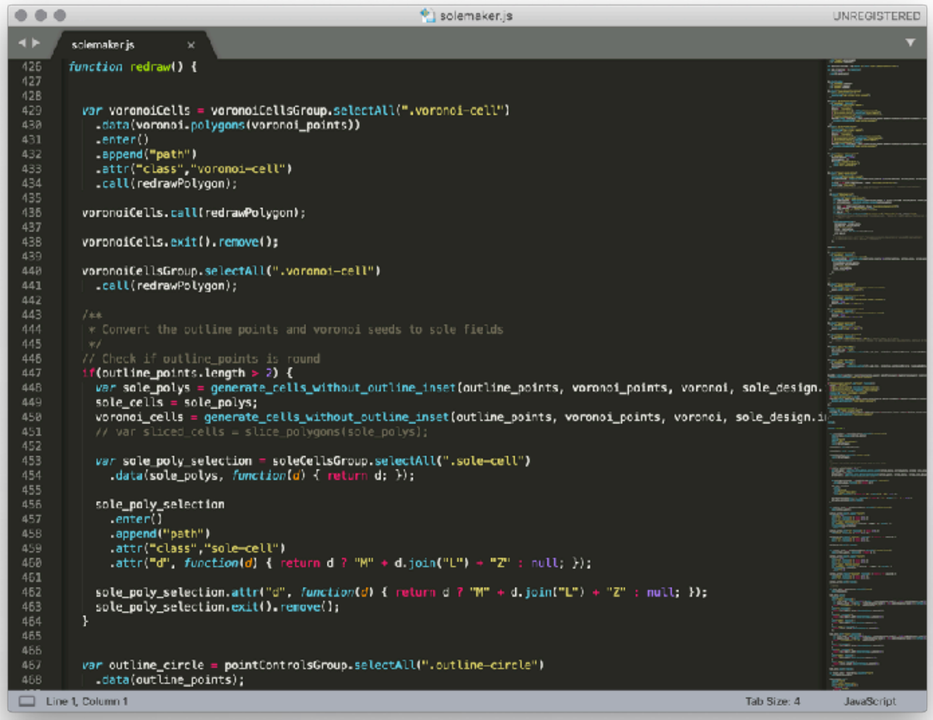
Data as a Material?

Physical Natives

Hfg Karlsruhe, 26 May 2021



WEAR sustain

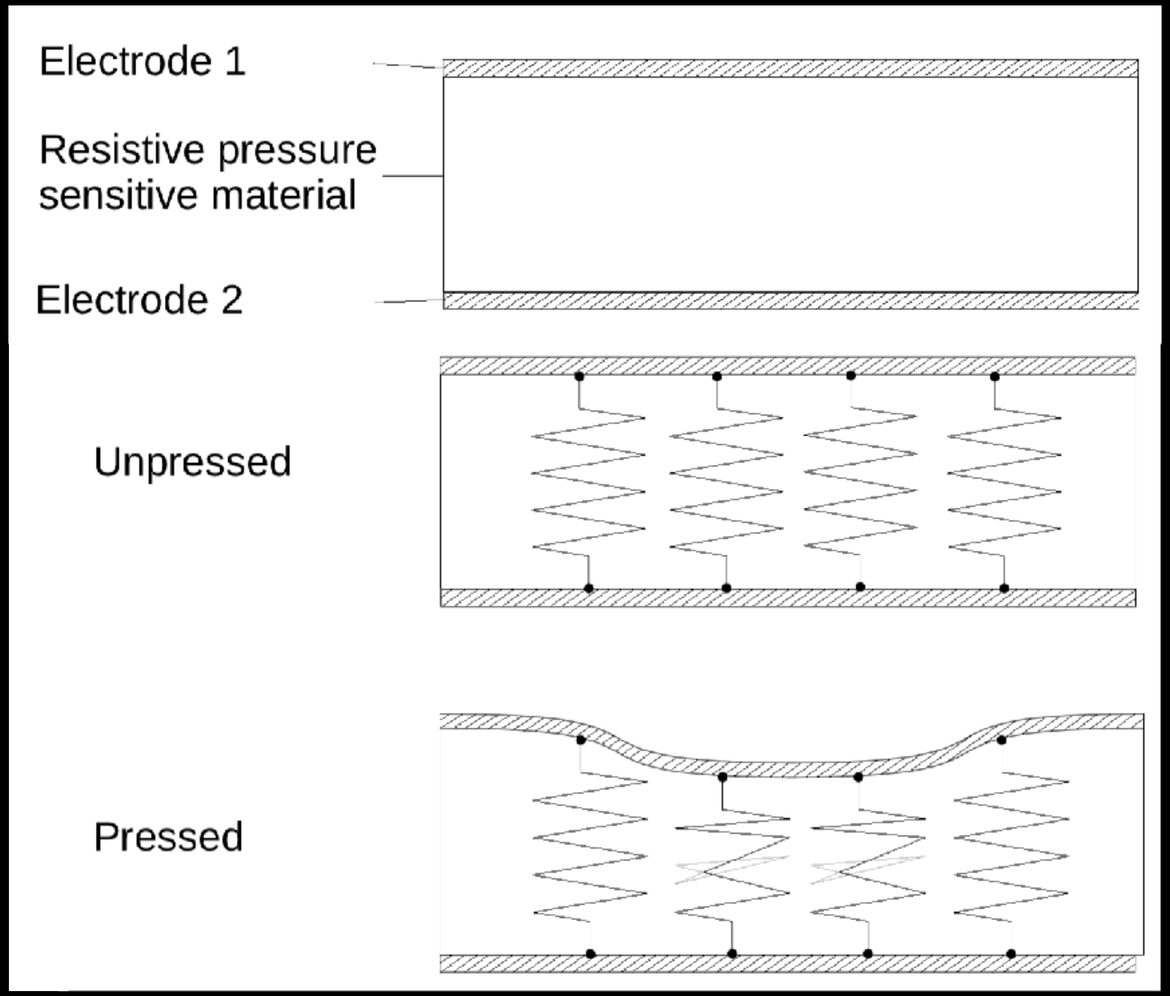
Solemaker

ArcInTexETN

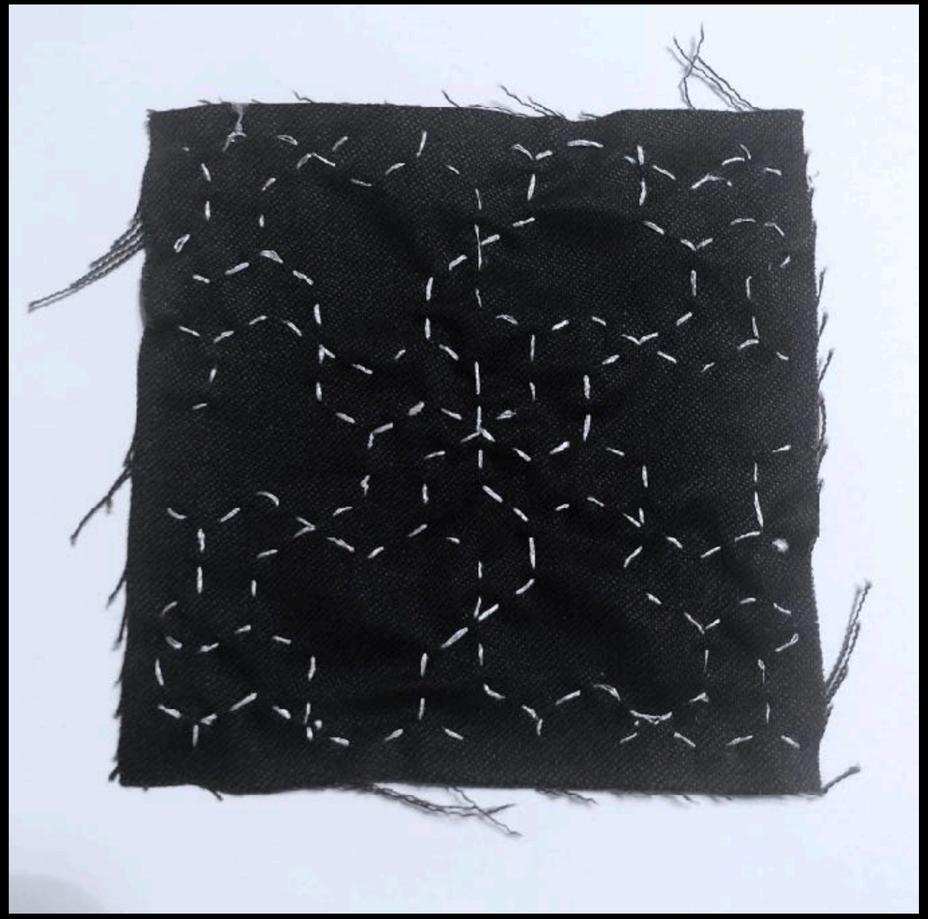
Marie Skłodowska-Curie actions European Training Network (ETN)

Physical Natives

Sandwich Sensor



The Sensor area needs to around the size of the object touching it



Make a Pillow/Pocket (Conductive Stuffing)

A Big Sandwich

- Stack the materials
- Velostat
  Eeontex
  Velostat
  Eeontex
  Velostat

Pressure sensitive material: Velostat

Velostat / Linqstat

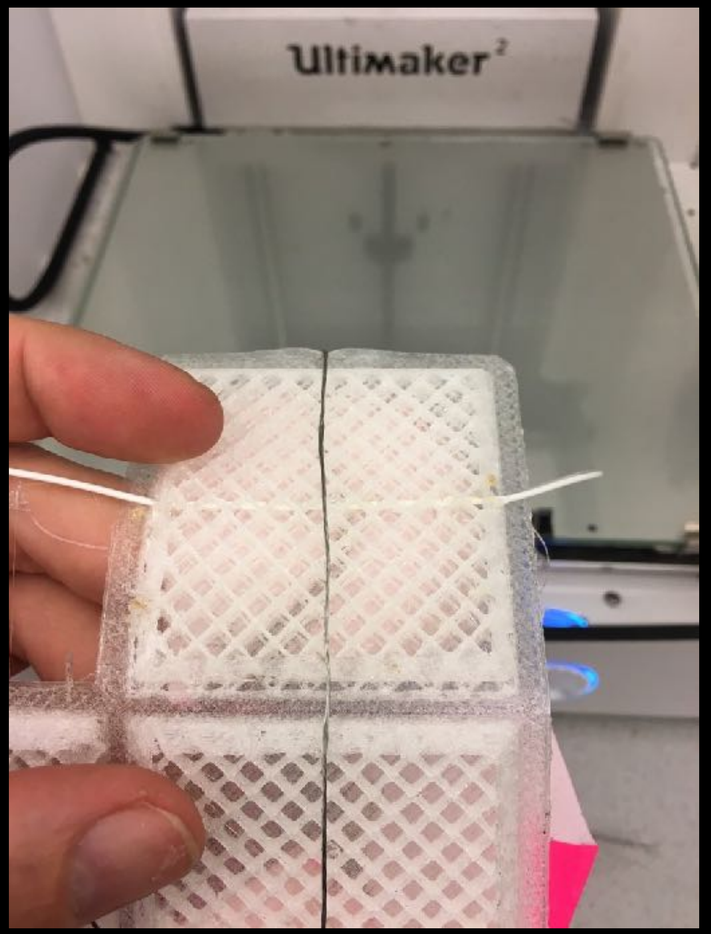
image: aura-comms.com

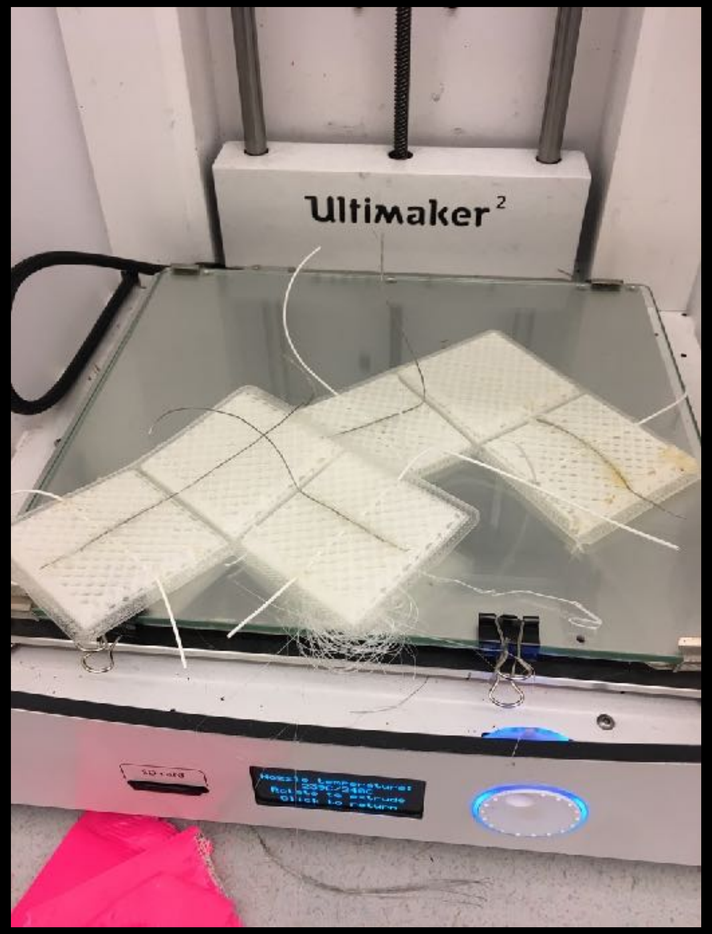
- PE film
- Impregnated with carbon based material
- Typically about 0.2 mm thick
- Slightly compressible

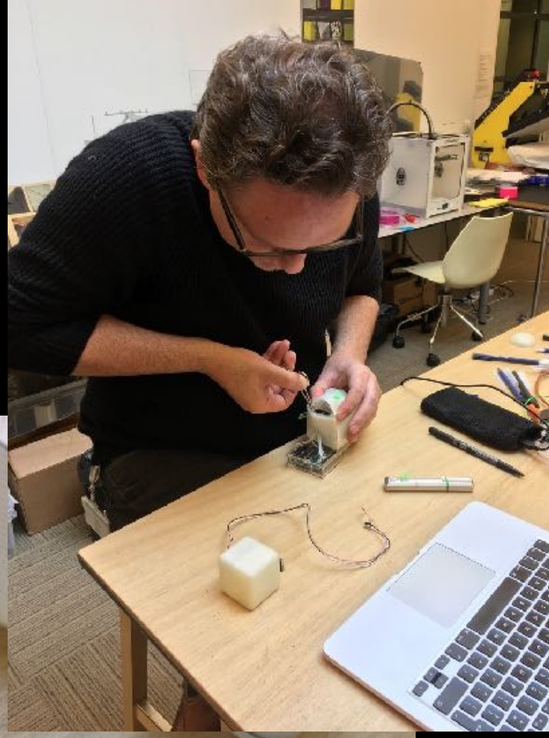
Different types of Velostat:

- High resistivity (50 kOhm/sq – 200 kOhm/sq) ← DO NOT USE THIS
- Medium resistivity (1 kOhm/sq – 50 kOhm/sq) ← USE THIS
  - Useful for large pressure sensors
- Low resistivity (< 1 kOhm/sq) ← OR USE THIS
  - Useful for pressure sensors

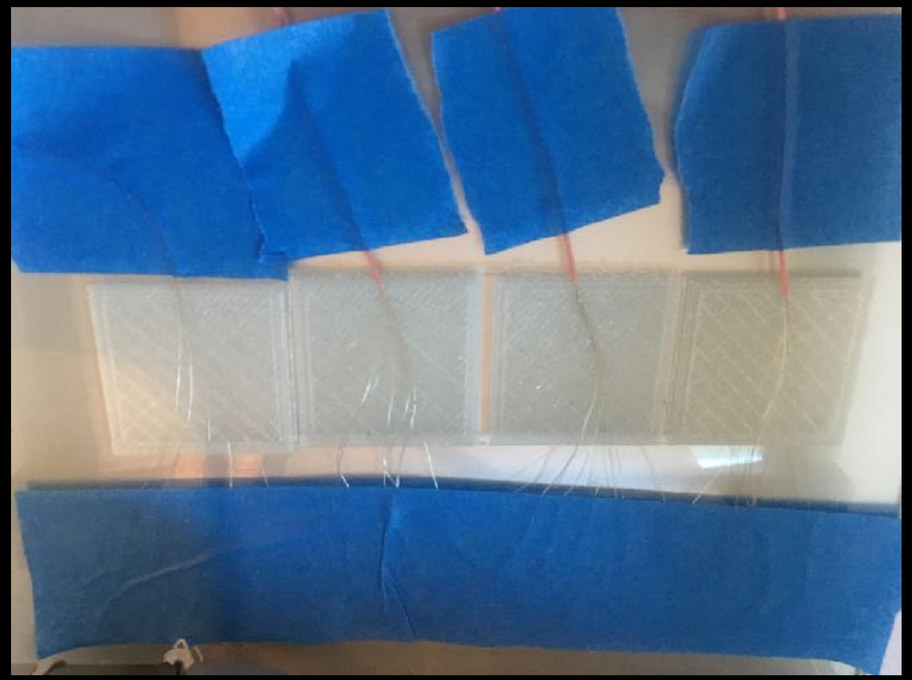
3D Printing

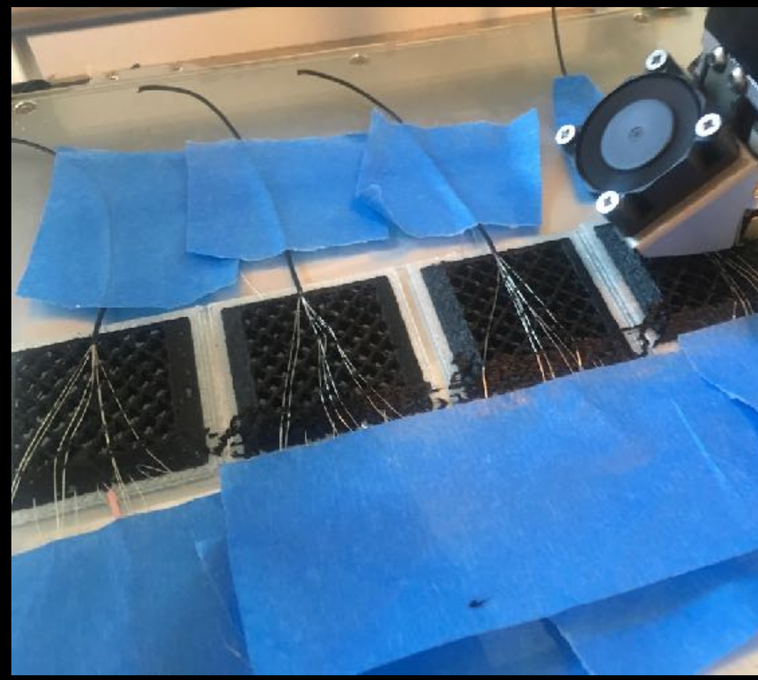




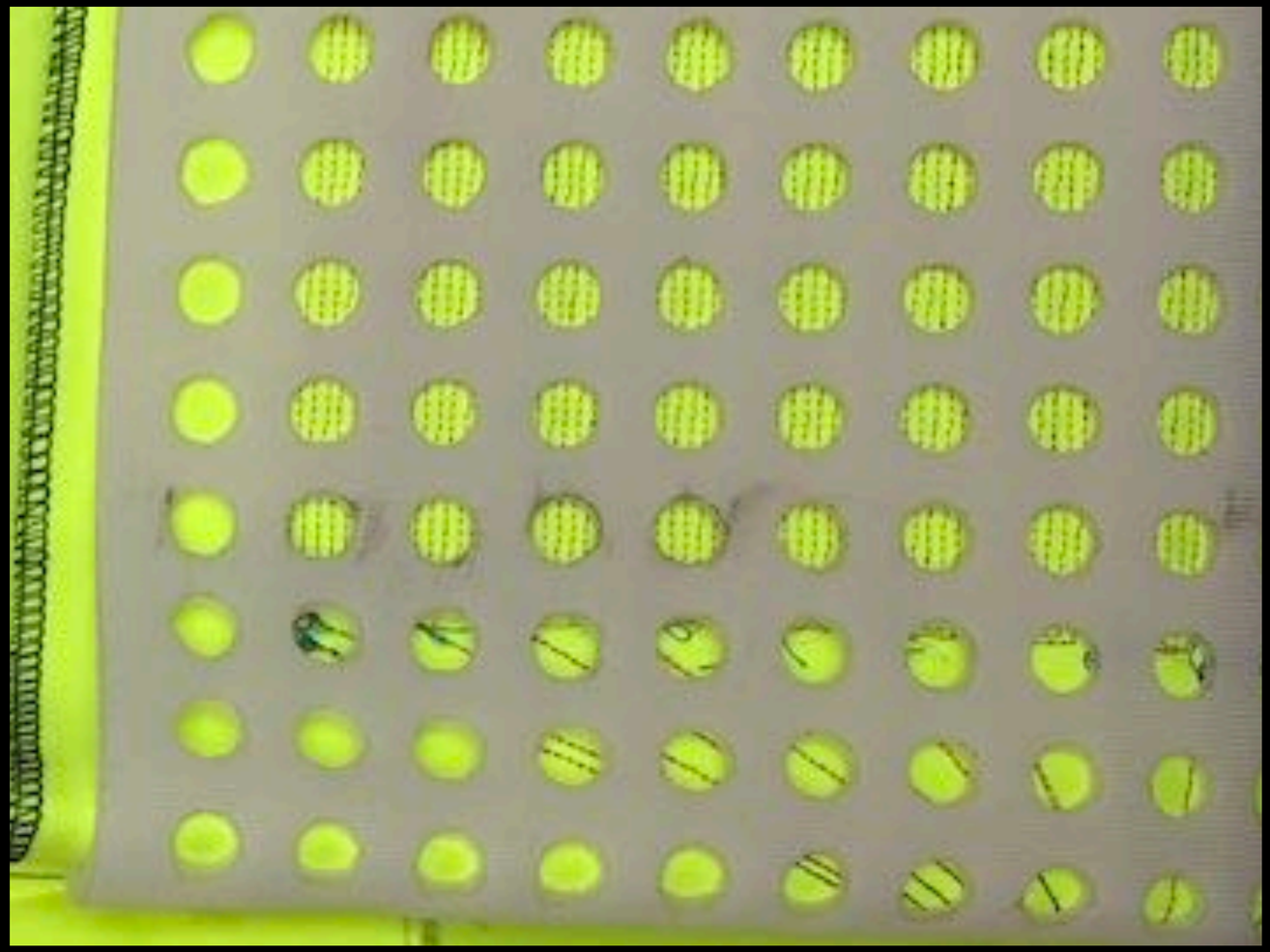


Making it on a 3D Printer

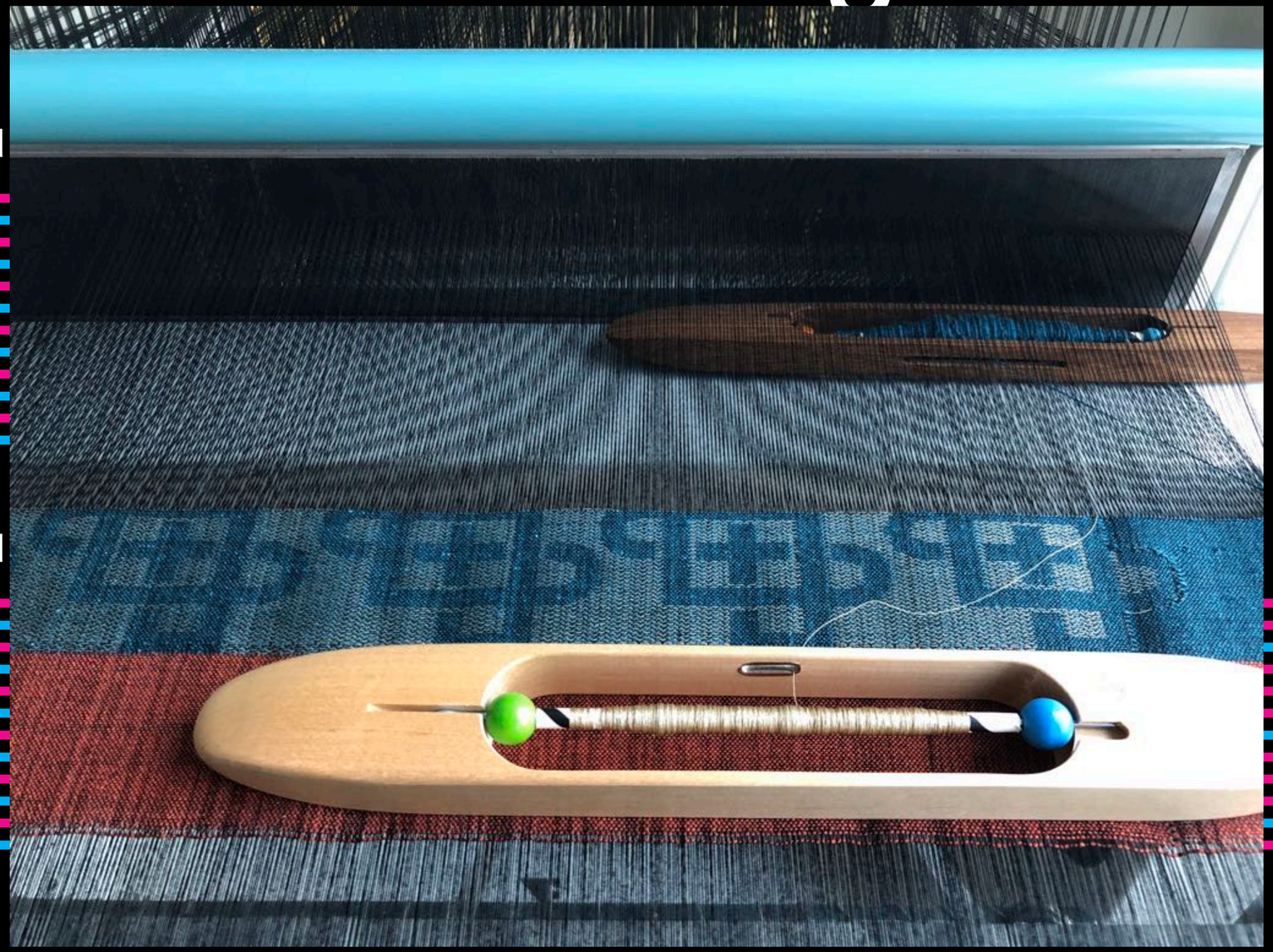




Add Holes with a laser cutter



Weaving



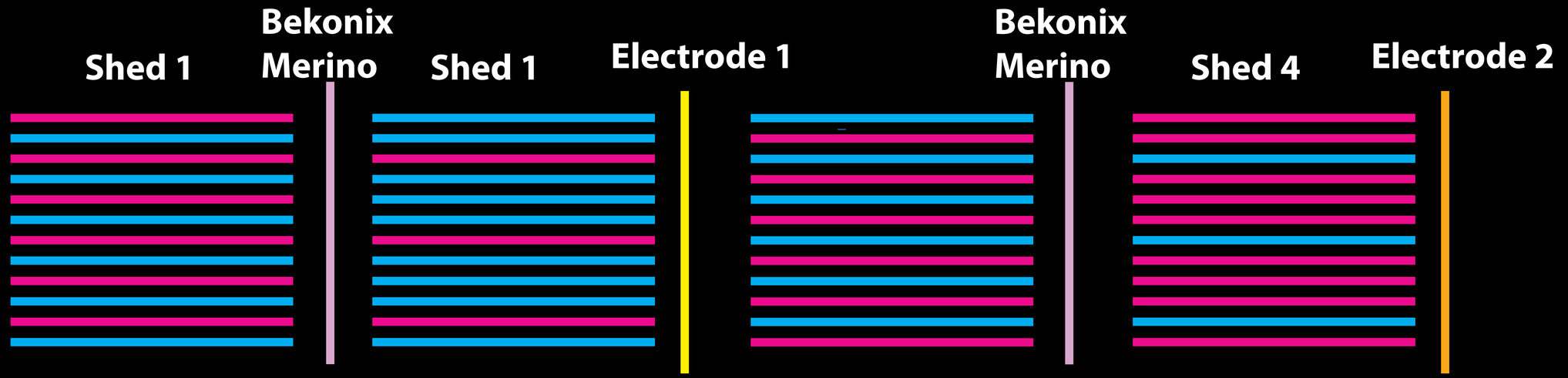
Shed

Shed

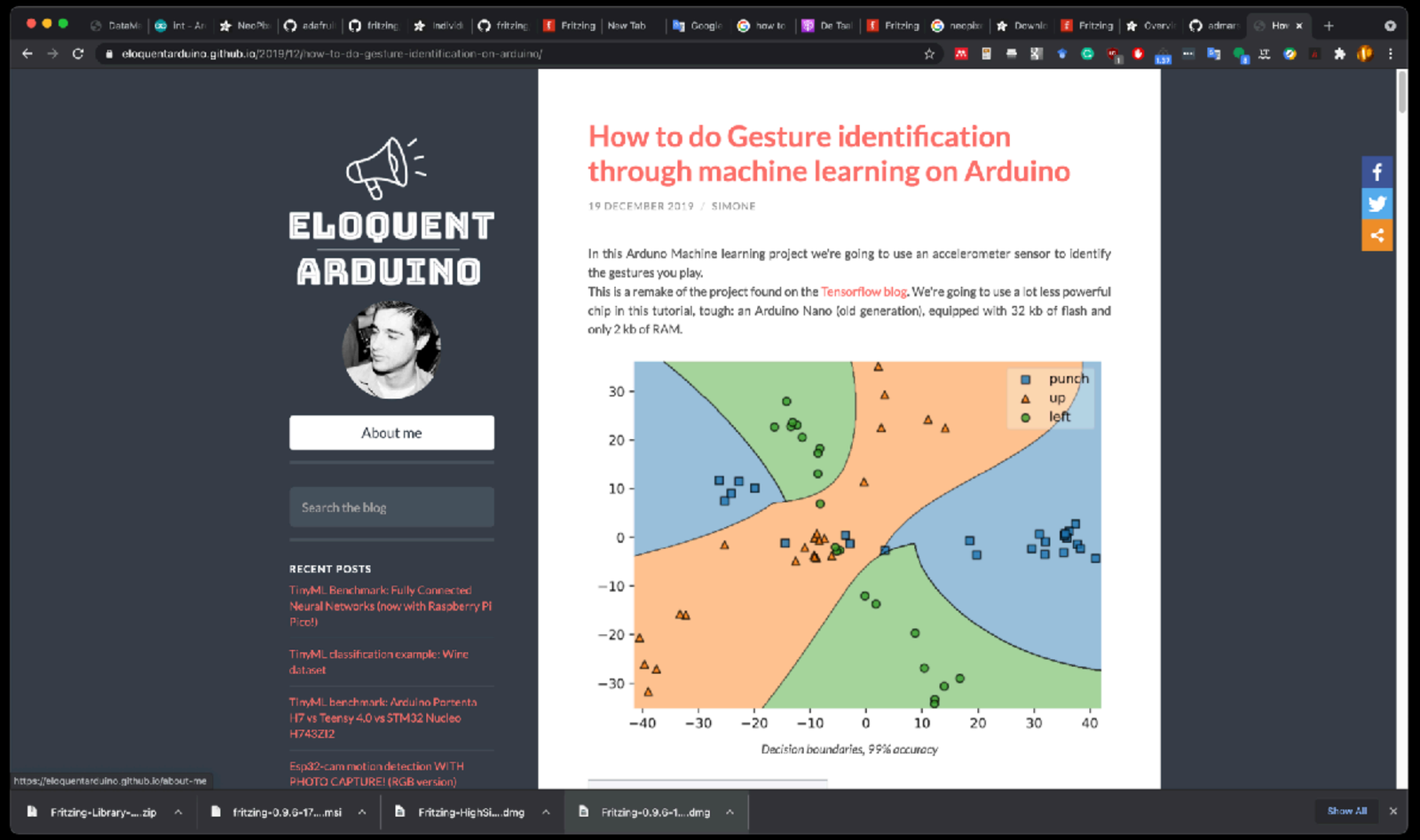
Electrode 2

Weaving


Shed 1
Bekonix Merino
Shed 2
Bekonix Merino


Shed 1
Bekonix Merino
Shed 1
Electrode 1
Bekonix Merino
Shed 4
Electrode 2

Machine Leaning



https://eloquentarduino.github.io/2019/12/how-to-do-gesture-identification-on-arduino/

Recalibration

- Replace the Configurations