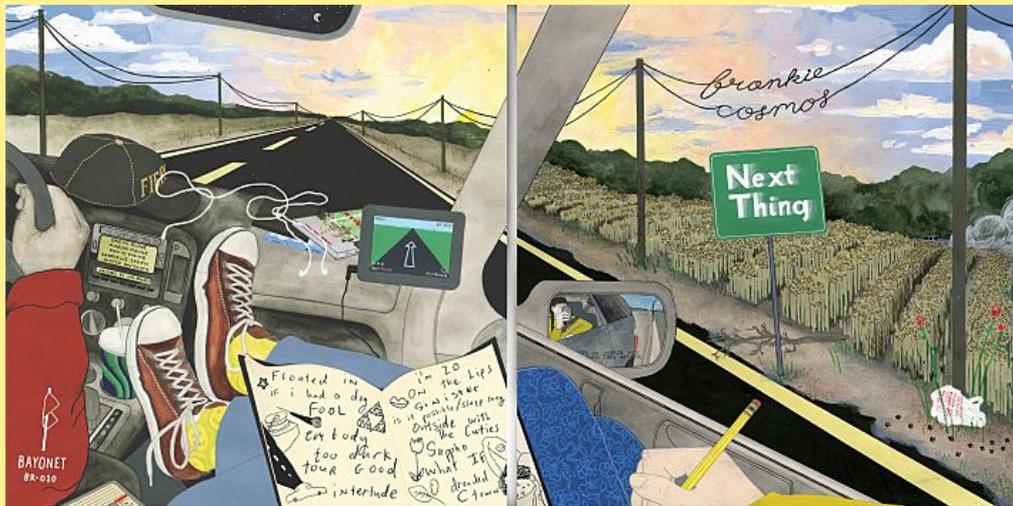


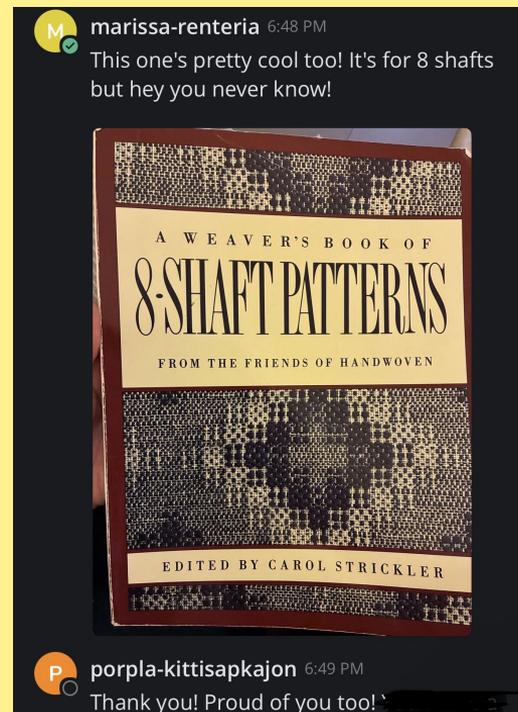
STRANGE LITTLE  
BITS I CALL HOME  
(ALSO KNOWN AS A  
MONDAY)

marissa renteria



Credit: [This is Not Happening Music Blog](#)

Frankie Cosmos' album *Next Thing*



Exchange on Mattermost w/ my peer Porpla

**BE IT EVER SO HUMBLE, IT'S MORE THAN JUST A PLACE. IT'S ALSO AN IDEA - ONE WHERE THE HEART IS.**



Early  
Pre-historic Home

Credit: [Genesis Apologetics - Homo Habilis](#)

# SO, WHAT DATA EXACTLY IS REPRESENTATIVE OF HOME?

I'll Try Anything Once (Demo), The  
Strokes

*Why not try it all  
If you only remember it once?  
Ooh, ooh  
Sit me down, shut me up  
I'll calm down and I'll get along with  
you*

**Tangible**

Woman in Mexico in her  
Kitchen, Early 1900's



Credit: [Reddit](#)

“Becoming”



**Intangible**

marissa renteria

## Sacred Practice of Tapestry Weaving by the Navajo



Credit: Navajo Photographer [Ray Manley](#)

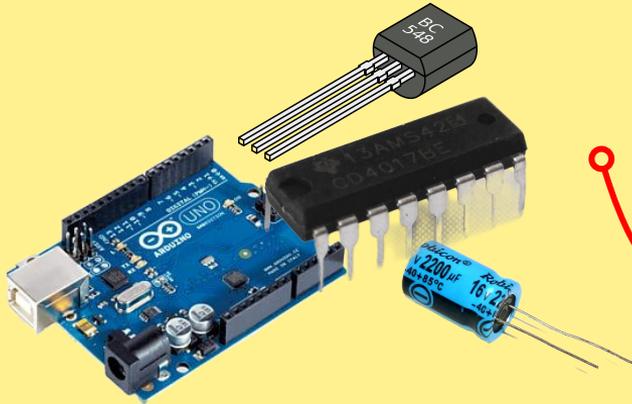
## An 1867 model of a Jacquard Loom



Credit: Science Museum/SSPL/Getty Images

I EXPLORE MY IDEA OF “HOME” BY  
ENCODING INTERGENERATIONAL  
REFLECTIONS INTO WOVEN STRUCTURE  
WHERE BINARY DATA DETERMINES THE  
WEAVE PATTERN THAT TRANSFORMS INTO  
A TEXTILE TOUCHLESS ELECTRONIC  
INSTRUMENT (THEREMIN)

## Synthesizer Component



Comprised of CMOS ICs, capacitors, and transistors

## Textile Component



## Synth + Textile



Electronics and textile merge for touch-based interactivity

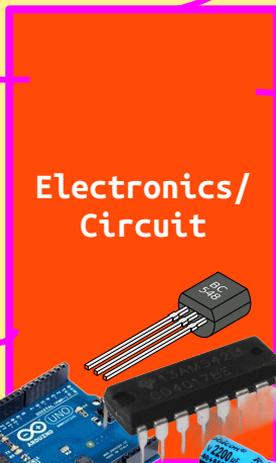
Pieces woven using binary data and conductive "yarn" to be integrated into synth



Volume Textile



25W Bass Amplifier



Electronics/  
Circuit



Pitch Textile



Grounding Bracelet  
(worn by person for  
static electricity to  
disperse into earth)

# LOGIC

## Text Data

.txt file with  
130-150  
characters



## Binary

0s and 1s



## Weaving Pattern for an 8-Shaft Loom

Shifts an  
Advancing Twill  
Pattern Forward  
based on “0” or  
“1”

# DATA COLLECTED

## 7 Questions:

¿Qué cosa le diría a usted más joven si supiera lo que sabe ahora?

¿Cuándo o dónde se siente más como usted misma?

¿Qué le gusta de usted misma?

Si pudiera volver a vivir, ¿quién sería?

¿Qué es lo más doloroso que ha vivido? ¿Qué es lo más hermoso que ha vivido?

¿Cuál cree que es el propósito de su vida?

¿Cómo definiría "hogar"?

## Grandmother

Esta de la fregada estar bien viejo uno.  
Aqui en el valle.  
Estar bromeando aunque no este cachonda.  
Una persona mas diferente, mas alegre.  
Tener el marido a chingue chingue. Tener unos sus hijos.  
Que sus hijos no se condenen.  
Cuando estoy con mi gente.

## Mother

Nunca te rindas.  
When I turned 30.  
Honesty.  
Yo misma. No me cambiaria el apellido.  
Cuando mis hijos me hacen un desaire.  
The mountains and my beautiful children.  
To help others. Anybody.  
Beautiful.

## Daughter

Authenticity is worth gold.  
When I write, make, and joke.  
My radical optimism.  
An astronaut.  
Feeling unseen. Love.  
To create beauty.  
Genuine connection.

## Data -> Binary -> Weaving Pattern: Python Code

```
for pick in range(TOTAL_PICKS):

    # Gradual blend grandmother → mother
    t = pick / (TOTAL_PICKS - 1)

    value_A = chunk_to_value(chunks_A[pick % len(chunks_A)])
    value_B = chunk_to_value(chunks_B[pick % len(chunks_B)])

    blended_value = round((1 - t) * value_A + t * value_B) % 8
    lift = BASE_LIFTS[blended_value]

# Adding conductive wefts based on when 3-bit chunk = 000 AND every 10th pick

conductive = False

if blended_value == 0:
    conductive = True

if pick % STRUCTURAL_INTERVAL == 0:
    conductive = True

# Labels when to put a conductive weft and a yarn weft
if conductive:
    weft_sequence = ["COPPER WIRE", "YARN"]
else:
    weft_sequence = ["YARN"]
```

## Excel File Weaving Patterns

Shaft Lift: 3,4,5,6   COPPER WIRE	
Shaft Lift: 3,4,5,6   YARN	
Shaft Lift: 2,3,4,5   YARN	
Shaft Lift: 3,4,5,6   YARN	
Shaft Lift: 1,2,3,8   YARN	
Shaft Lift: 2,3,4,5   YARN	
Shaft Lift: 1,6,7,8   YARN	
Shaft Lift: 1,2,7,8   YARN	
Shaft Lift: 5,6,7,8   YARN	
Shaft Lift: 4,5,6,7   YARN	

Grandmother-Mother - Volume Textile

Shaft Lift: 3,4,5,6   COPPER WIRE	
Shaft Lift: 3,4,5,6   YARN	
Shaft Lift: 1,2,3,4   COPPER WIRE	
Shaft Lift: 1,2,3,4   YARN	
Shaft Lift: 3,4,5,6   YARN	
Shaft Lift: 1,2,3,8   YARN	
Shaft Lift: 3,4,5,6   YARN	
Shaft Lift: 1,6,7,8   YARN	
Shaft Lift: 1,2,7,8   YARN	
Shaft Lift: 5,6,7,8   YARN	

Daughter - Pitch Textile



- ❖ **Super Fine Wool Yarn (20-23 WPI)** for warp and weft
- ❖ **20 AWG enameled copper wire** for weft
- ❖ **30 AWG enameled copper wire** for floating selvages



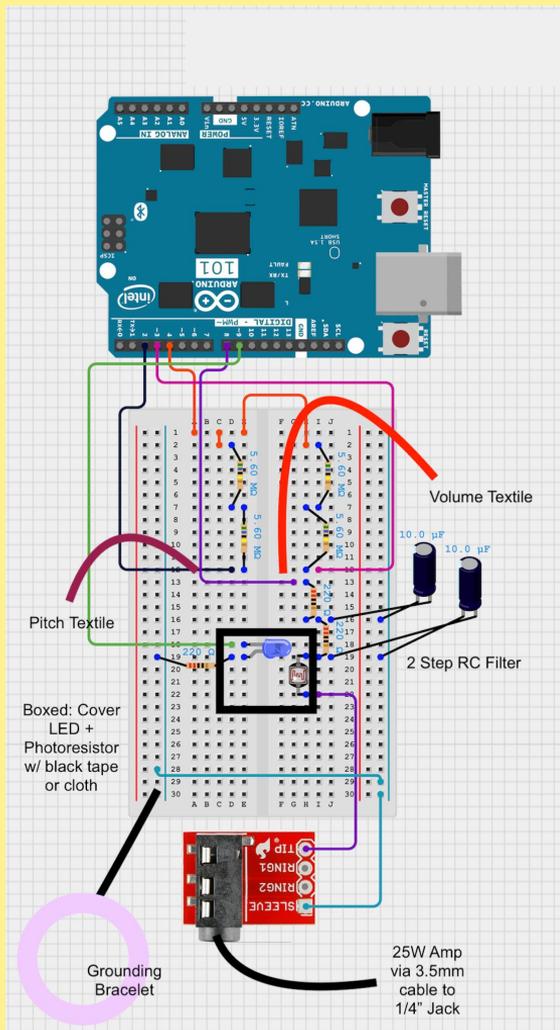


Washi Paper Grounding Bracelet

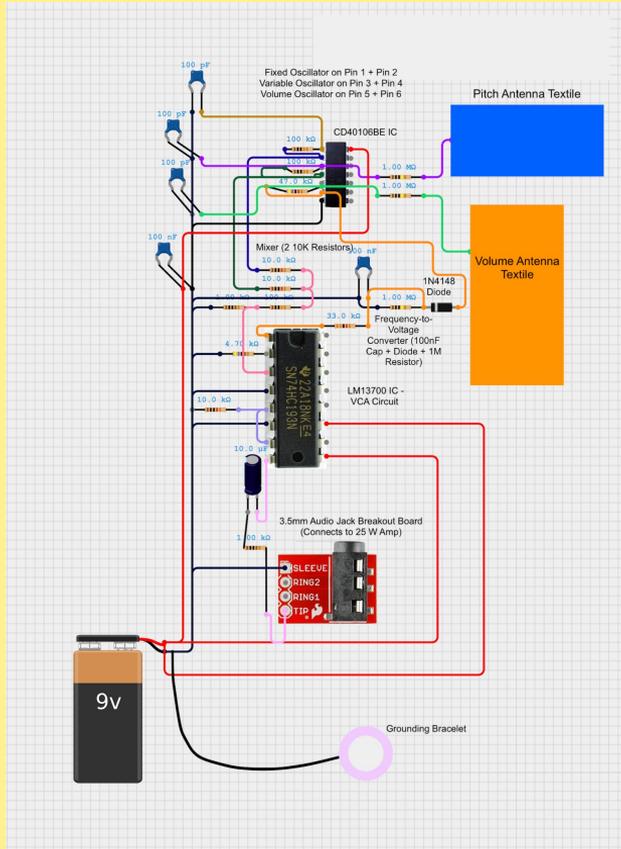
## Digital Theremin Circuit Diagram

**Inputs:** Volume + Pitch  
Textiles

**Outputs:** LED (for volume  
control) + sound



## From Analog



to

## Digital (with the spirit of Analog)

```
#include <CapacitiveSensor.h> // capacitive function library to create capacitive sensors

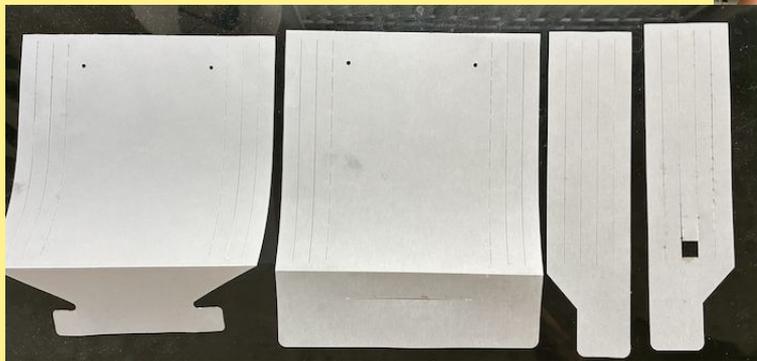
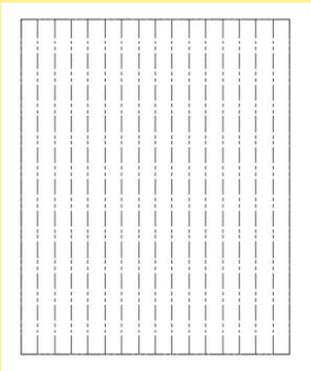
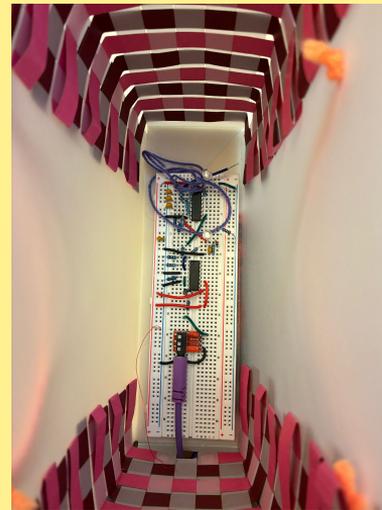
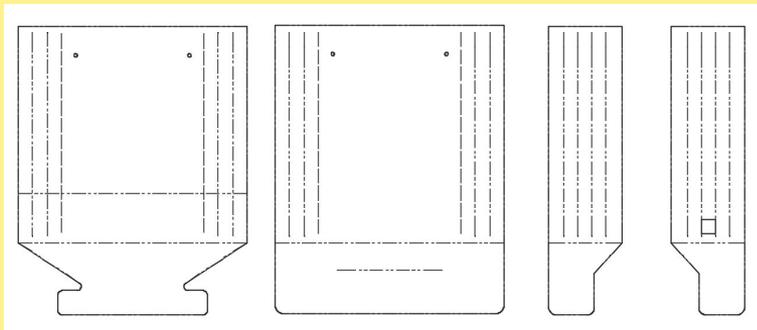
// pin 4 sends signal to pins 2 and 3 where the latter pins listen for the signal from pin 4
CapacitiveSensor pitchAntenna = CapacitiveSensor(4,2);
CapacitiveSensor volAntenna = CapacitiveSensor(4,3);

// variables to store smoothed raw capacitive values
float smoothPitch = 500;
float smoothVol = 0;

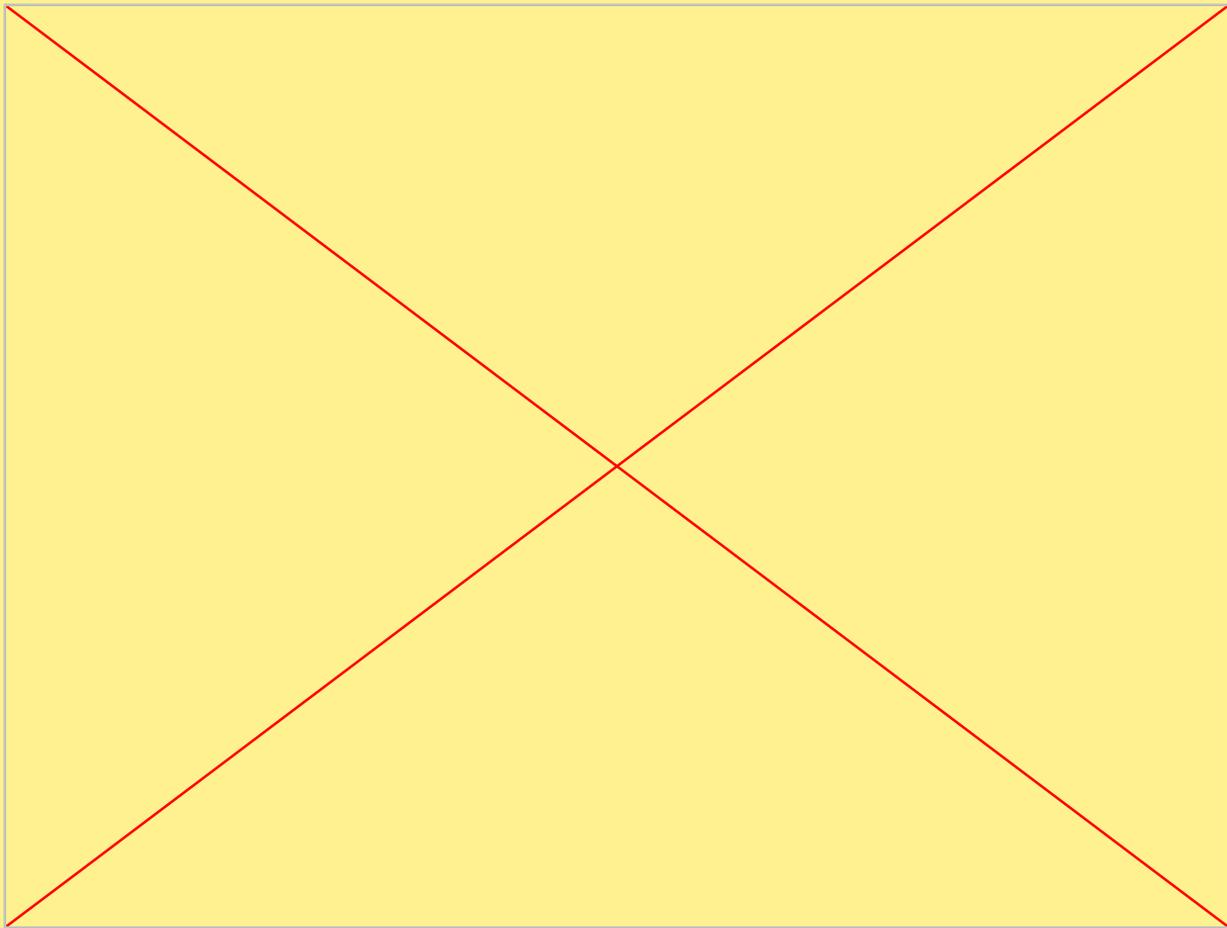
void setup() {
  pinMode(8, OUTPUT); // pitch sound output - sends sound through 2 step RC filter to "TIP"
  pinMode(9, OUTPUT); // LED "volume"
```

# Circuit Enclosure

Laser cut Vellum Paper + Cardstock, Yarn







# THANK YOU

## **Mentors**

Louise Massacrier, Anoush Arshakyan, Emma Pareshi

## **Peers**

Porpla Kittisapkajon, Alex Sargent, Patricia Perez, Heaven  
Whitby, Claire Cavanaugh, Maddie Olsen

## **External Advisors**

Susan van Winkle  
Passepartout Duo (Nicoletta + Chris)  
Nicola Privato (Intelligent Instruments Lab)  
Michelle Vossen

My mother, grandmother, and to women building or rebuilding  
their “home”

My partner, Joshua

## **Music Credit**

StarTrails

**Linkedin:**

[linkedin.com/marissarenteria](https://www.linkedin.com/company/marissarenteria)

**Portfolio:**

<https://teenjean.github.io/portfolio>

**Fabricademy Blog:**

[class.textile-academy.org/2026/marissa-renteria/](https://class.textile-academy.org/2026/marissa-renteria/)