LoomOne

The arduino for textiles

Fabricademy final project Aristarco Cortes

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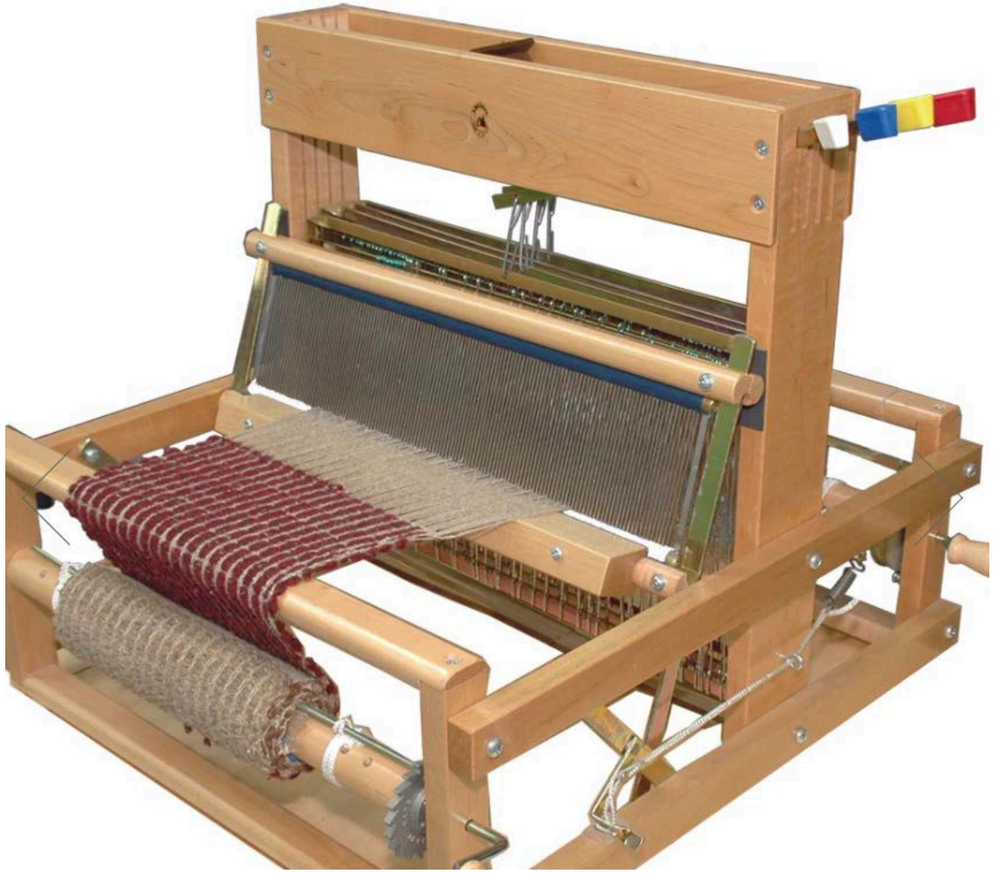
aristarco



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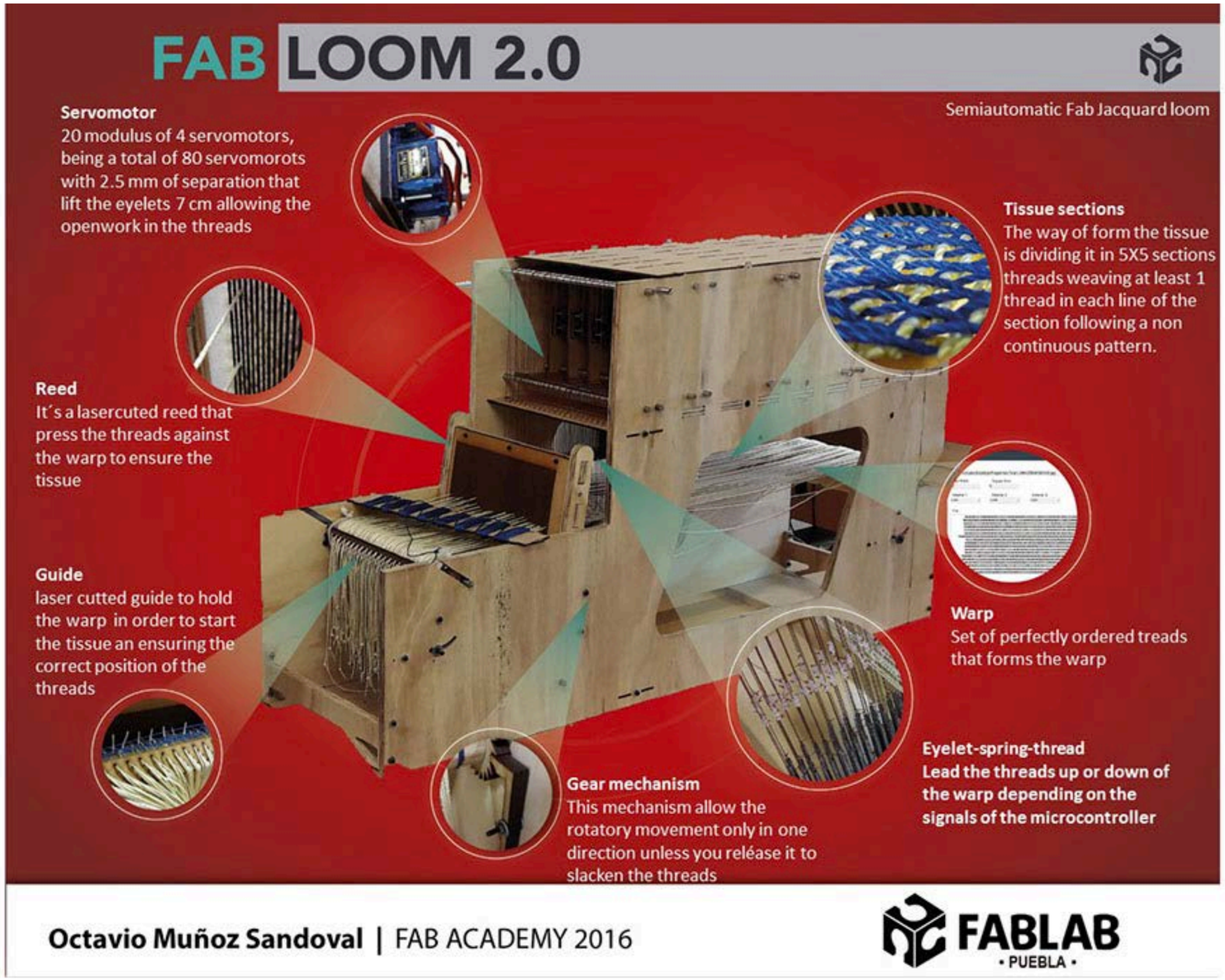

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Octavio Muñoz Fab Academy 2016

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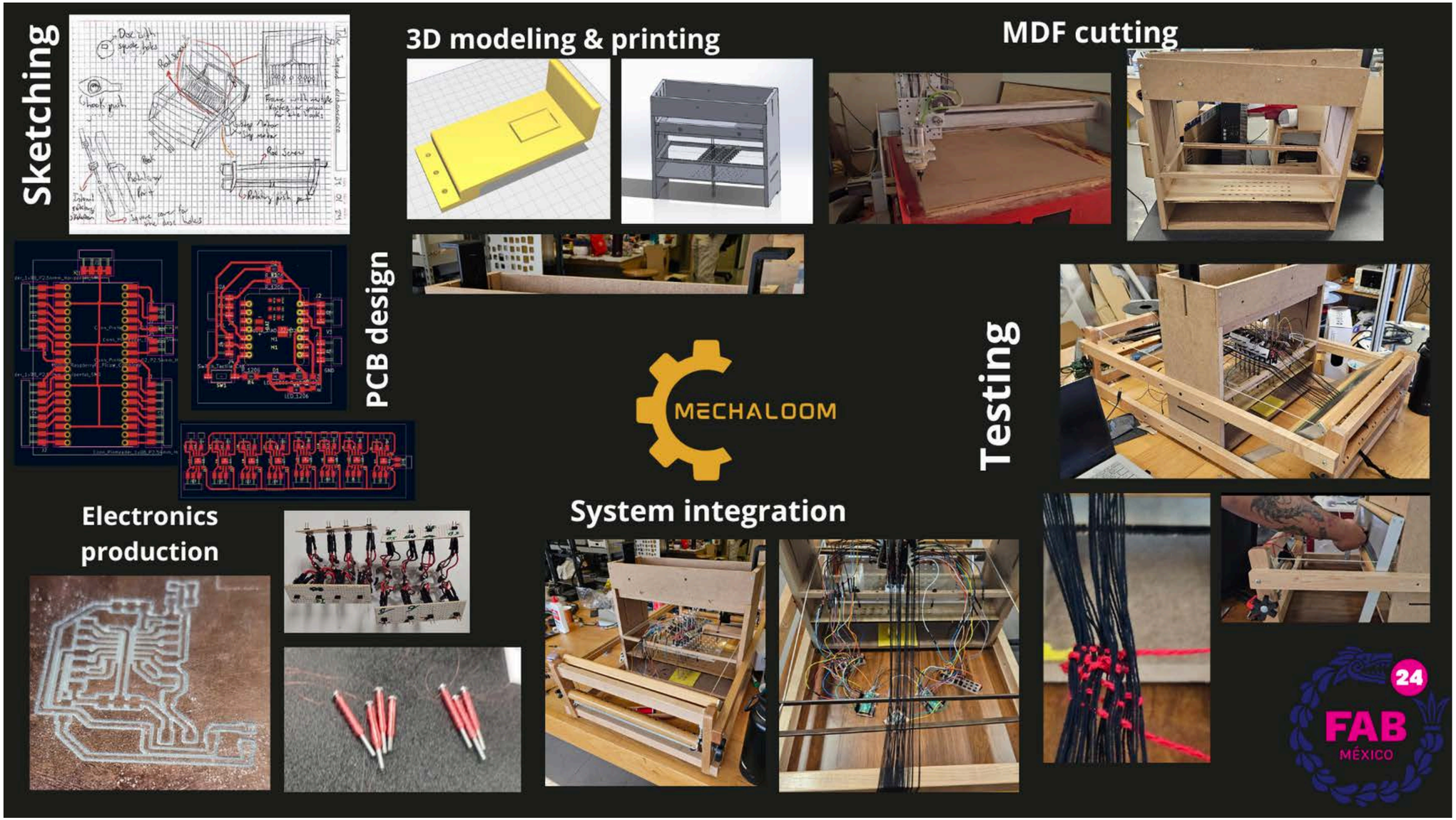
Franco Robredo Fab Academy 2018



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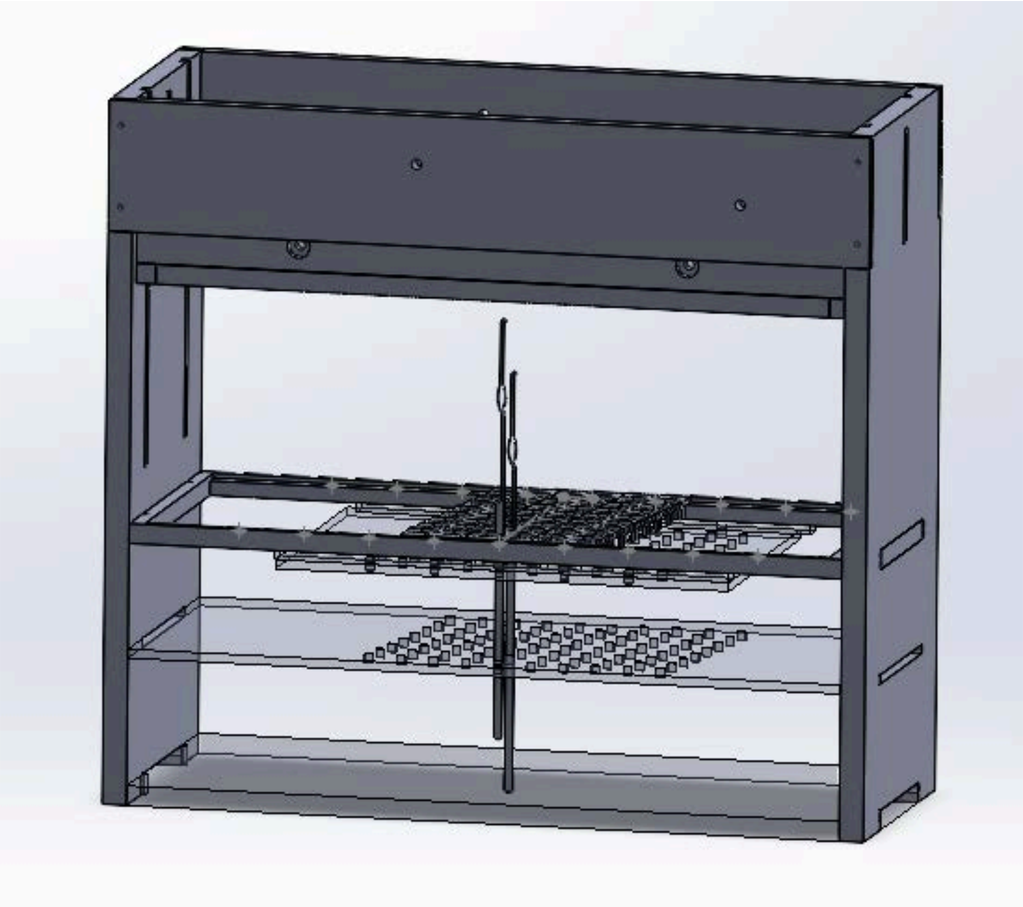
Hector Cornejo Fab Academy 2024



Loom One

Change state 40 milisec, energy needed 19 miliamp instantly

State change is estimated at a rate of 1,300 threads per second at 1 amp energy demand. Meaning a 40 cm loom can change state in 0.12 sec

4 threads per cm in the current stage; targeting up to 12 threads per cm, this is a fabric similar to the 32-count embroidery linen.

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Value proposition

Our initiative supports a textile design community through a low-cost automated jacquard loom, courses, sale of community-created designs, creation of other hardware, and everything needed to create awesome pieces of fabric

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Opportunities

Cost: Target 1,500 USD

Community:

Camilla Aamot Århaug

December 30, 2015

by Digital Weaving Norway

Robin Kang

December 30, 2015

by Digital Weaving Norway

Outi Martikainen

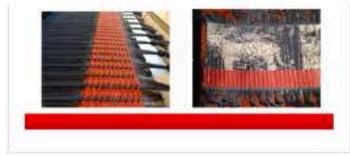
December 30, 2015

by Digital Weaving Norway

Monique Van Nieuwland

December 30, 2015

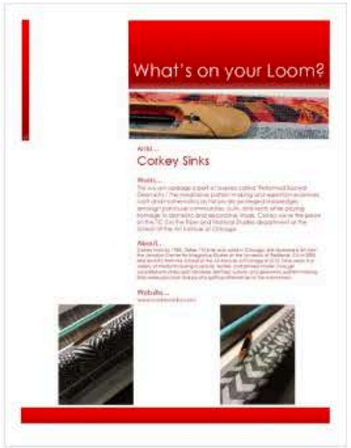
by Digital Weaving Norway



Anne Størseth

December 30, 2015

by Digital Weaving Norway



Corkey Sinks

December 30, 2015

by Digital Weaving Norway

Kate Nartker

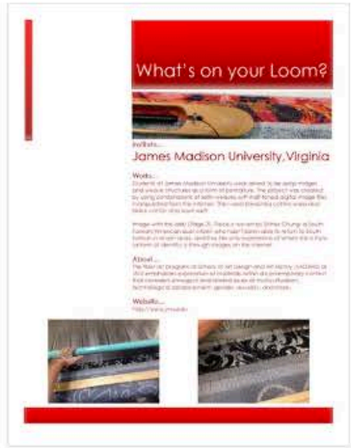
December 30, 2015

by Digital Weaving Norway

Havva Halaceli

December 30, 2015

by Digital Weaving Norway



James Madison University

December 30, 2015

by Digital Weaving Norway

Robin Lynne Haller

December 30, 2015

by Digital Weaving Norway

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Example TC2 community

Objective Fabricademy sprint:

- 12 cm, 48 thread capability fully assembled loom
- Better Fablababable design (Without Leclercs Dorothy’s parts)
- Low capability software, AYAB evealuation
- Webpage architecture / Wizard of Oz enabled
- Community and long tail strategy in place

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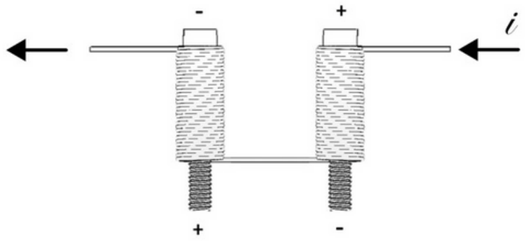
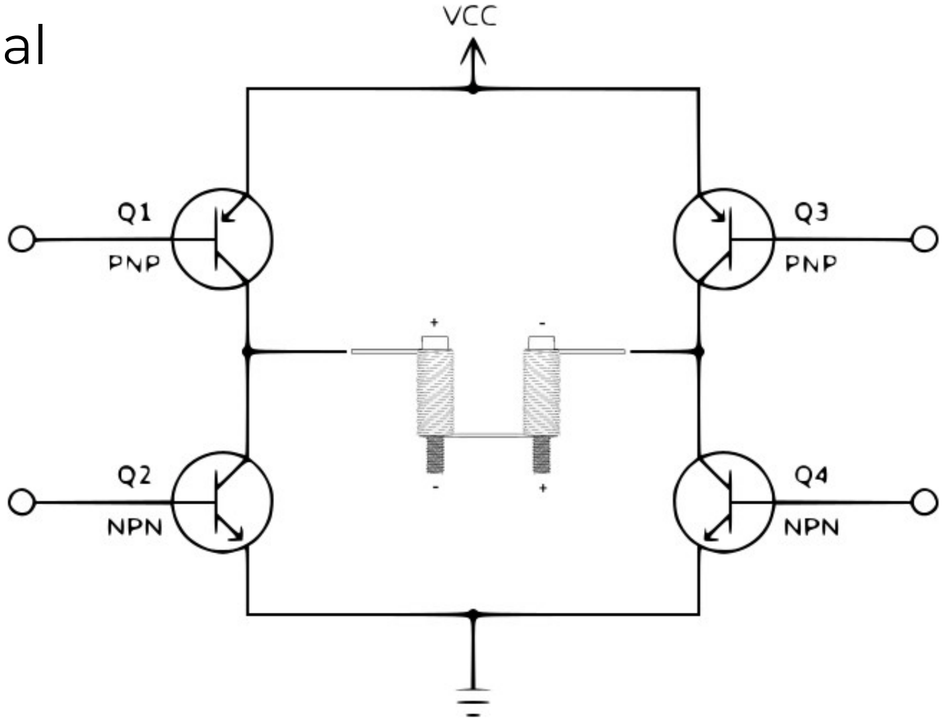
Electronics development

The base of the heddle selection is an electromagnetic device that changes the polarity of two small electromagnets in serial conection



Final electromagnets design



Loom One H Bridge configuration

To control the electromagnets it was necessary to addapt an H bridge. Depending on the signal the polarity of both magnets change at the same time

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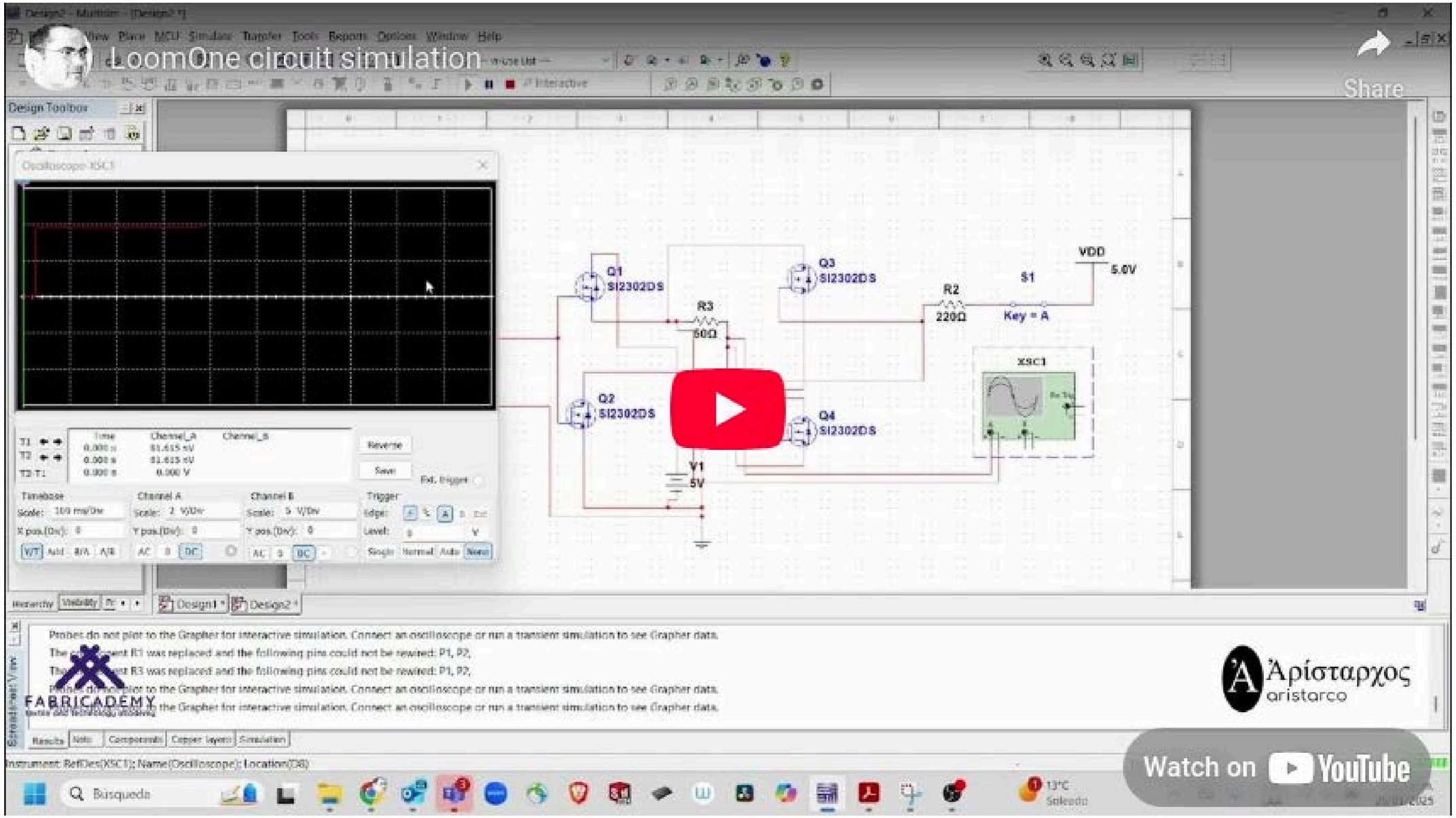
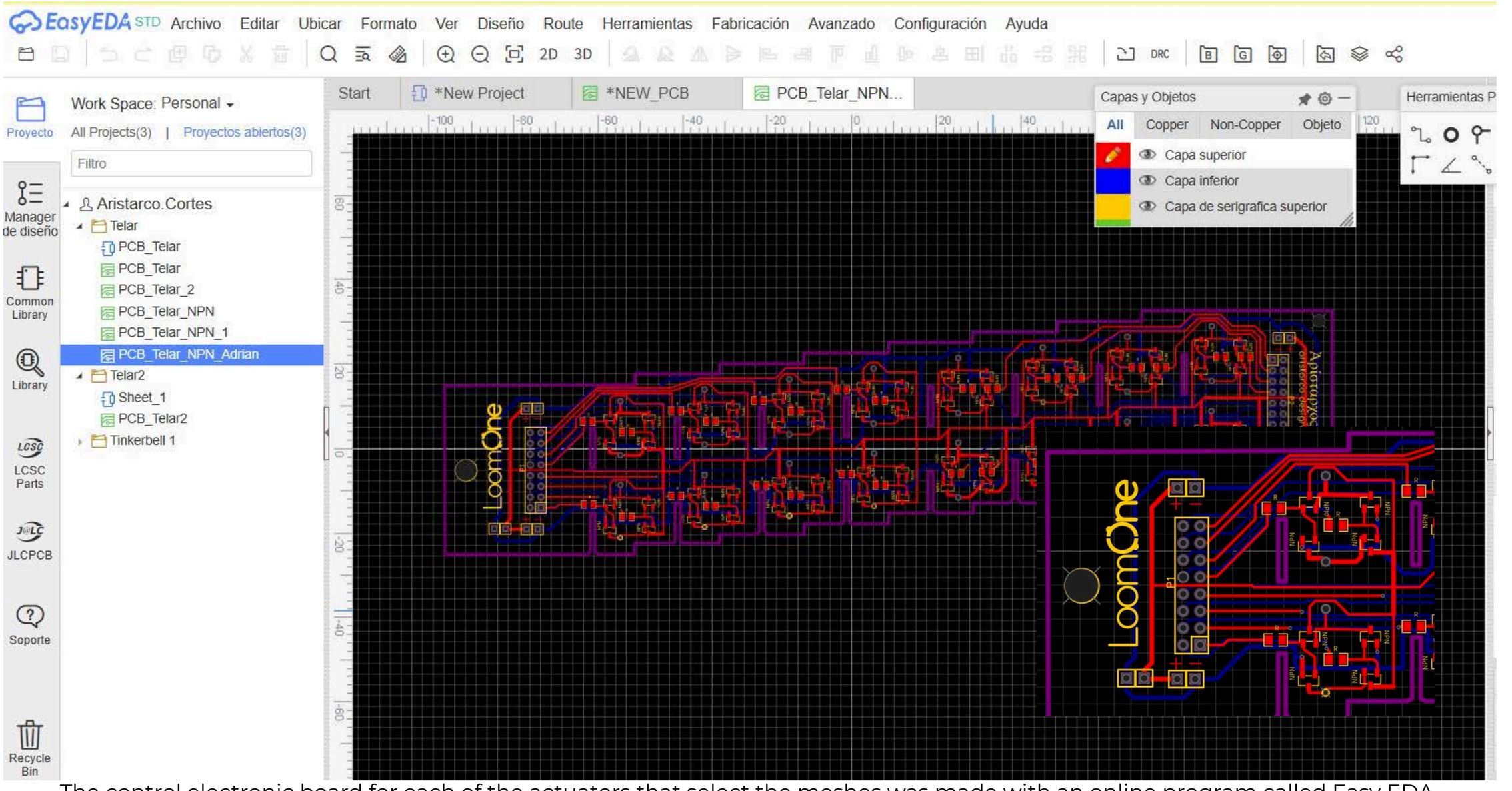
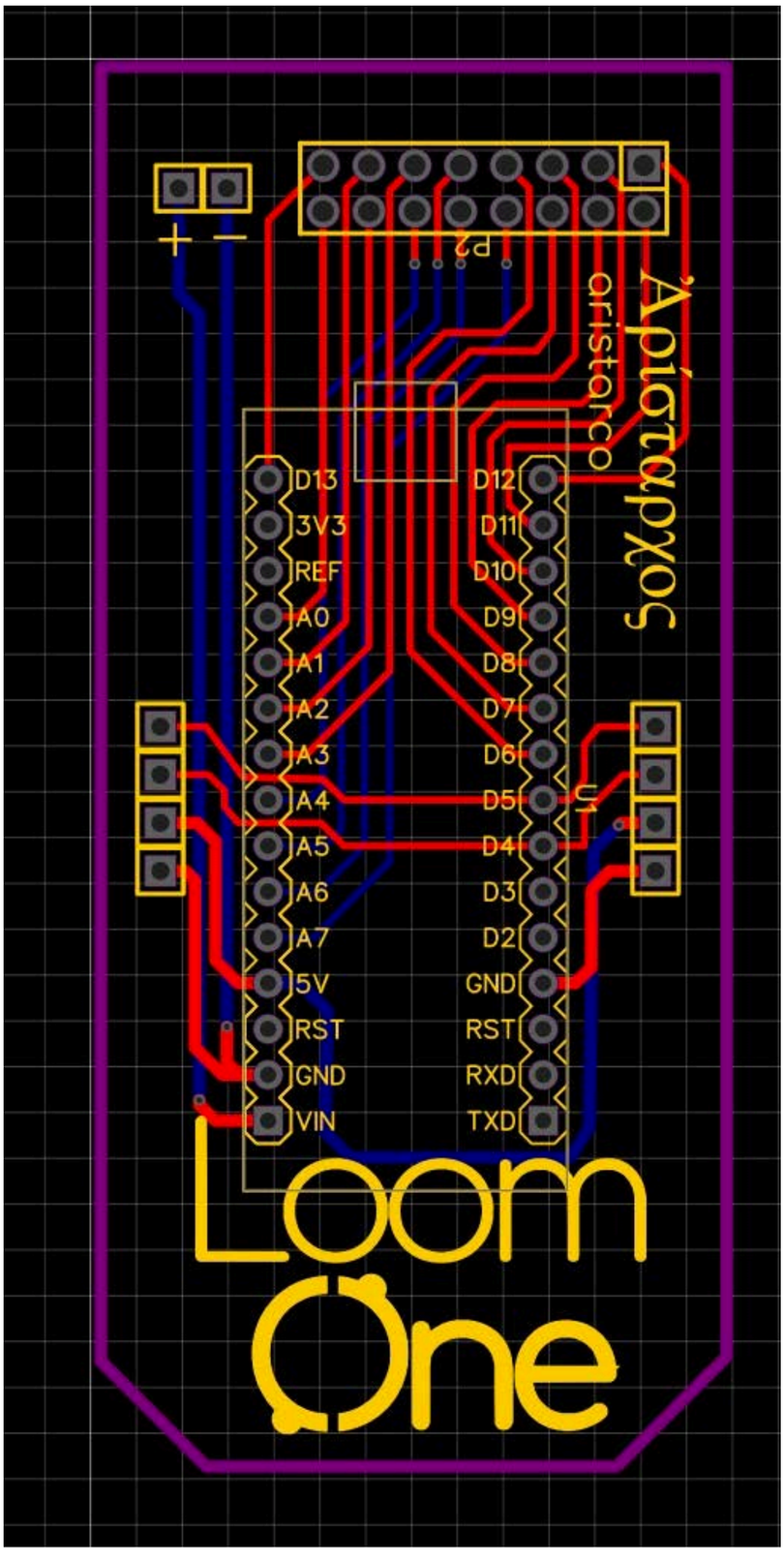
H brindge Multisim simulation





The control electronic board for each of the actuators that select the meshes was made with an online program called Easy EDA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D11
D10
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D4
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GND
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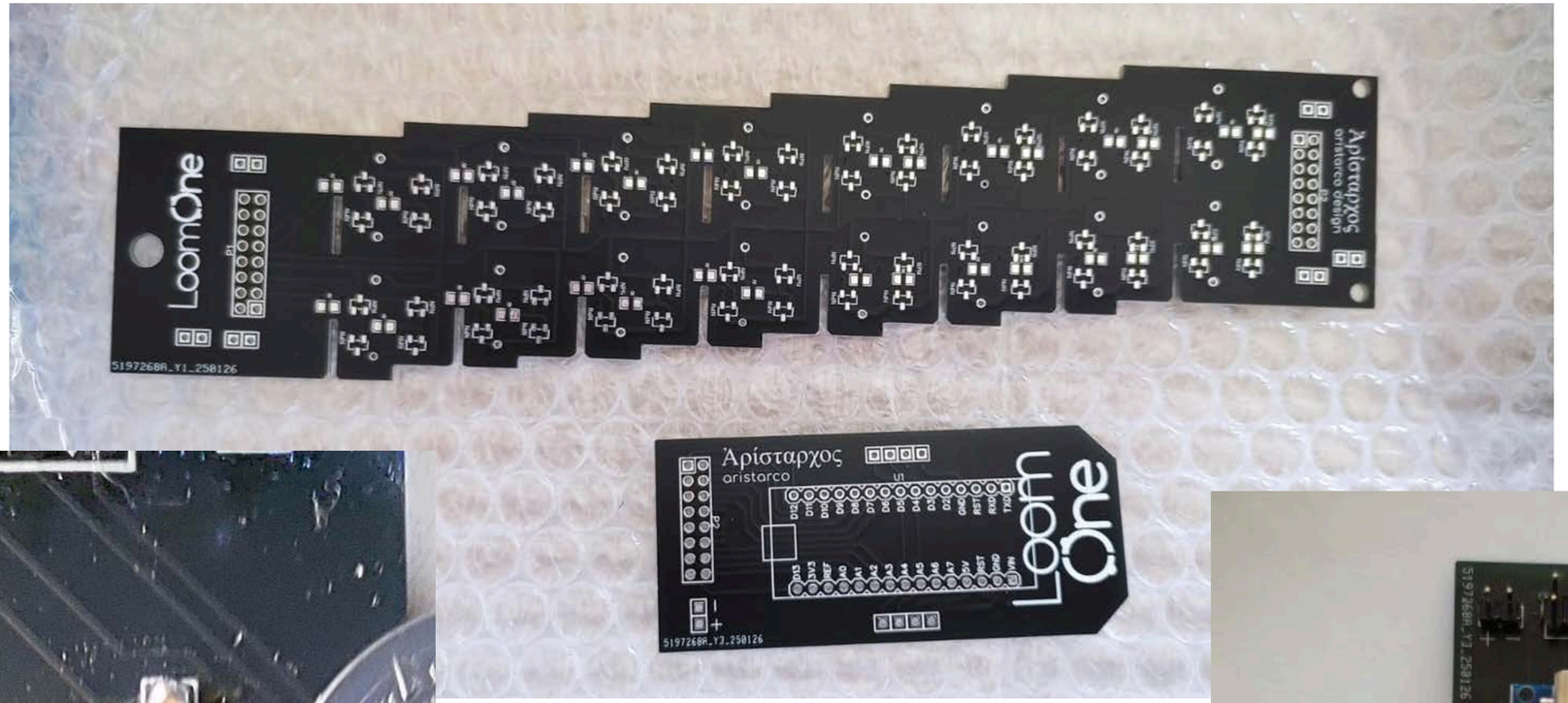
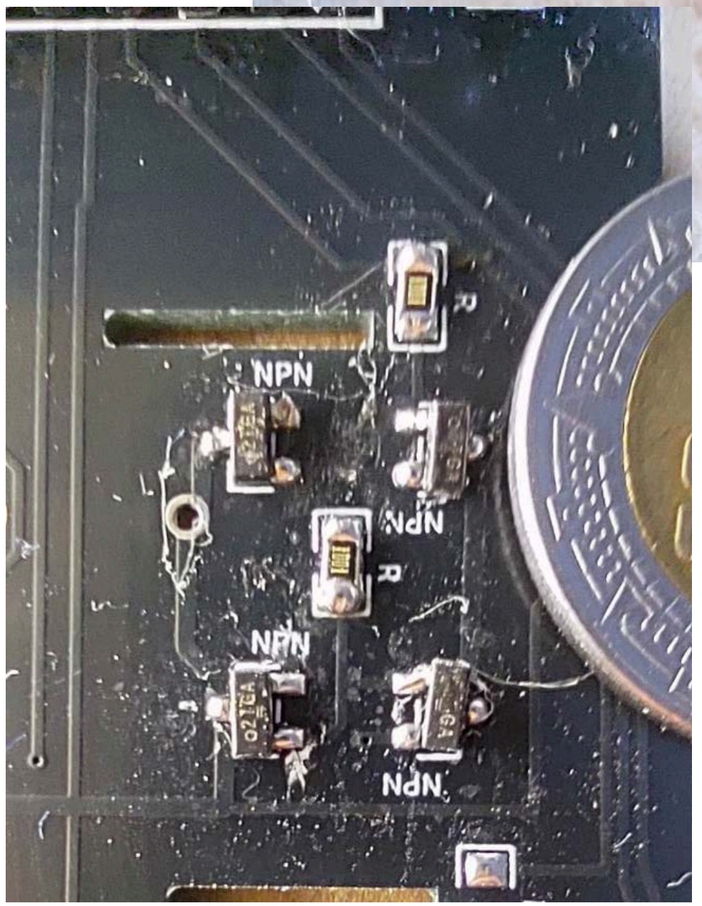
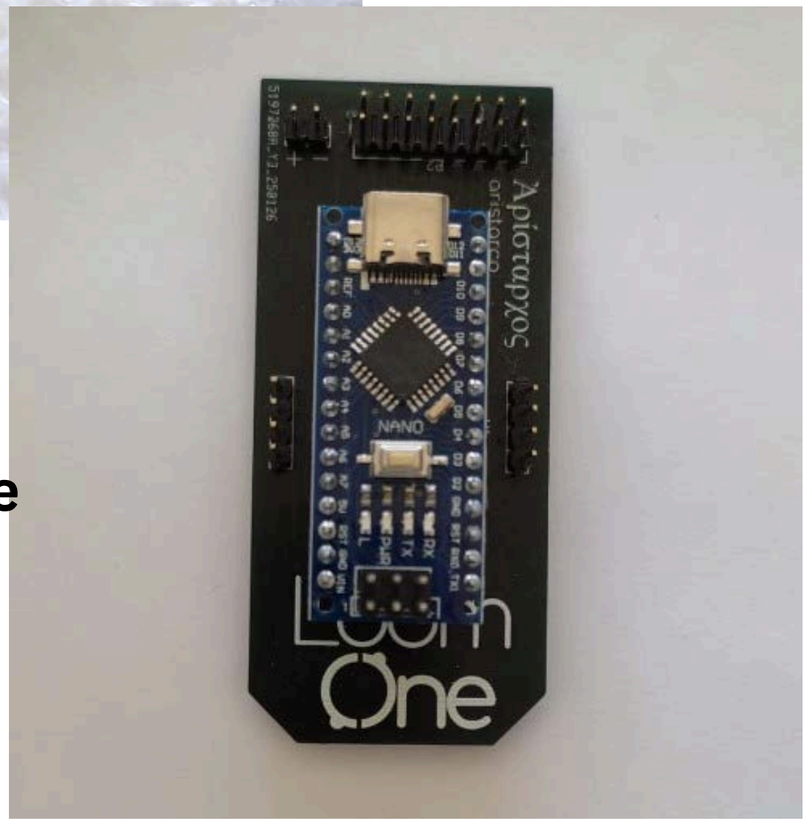
RXD
TXD
S1
Loom
One

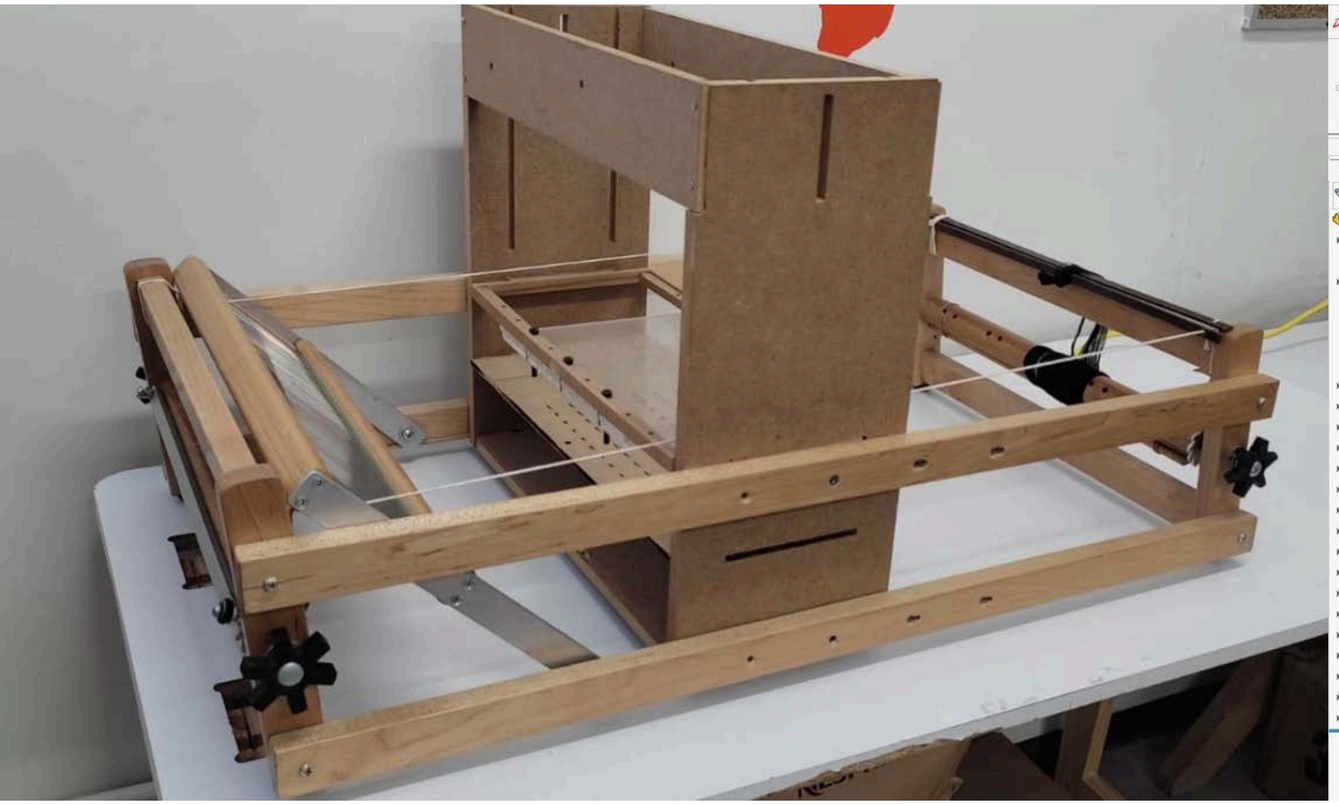


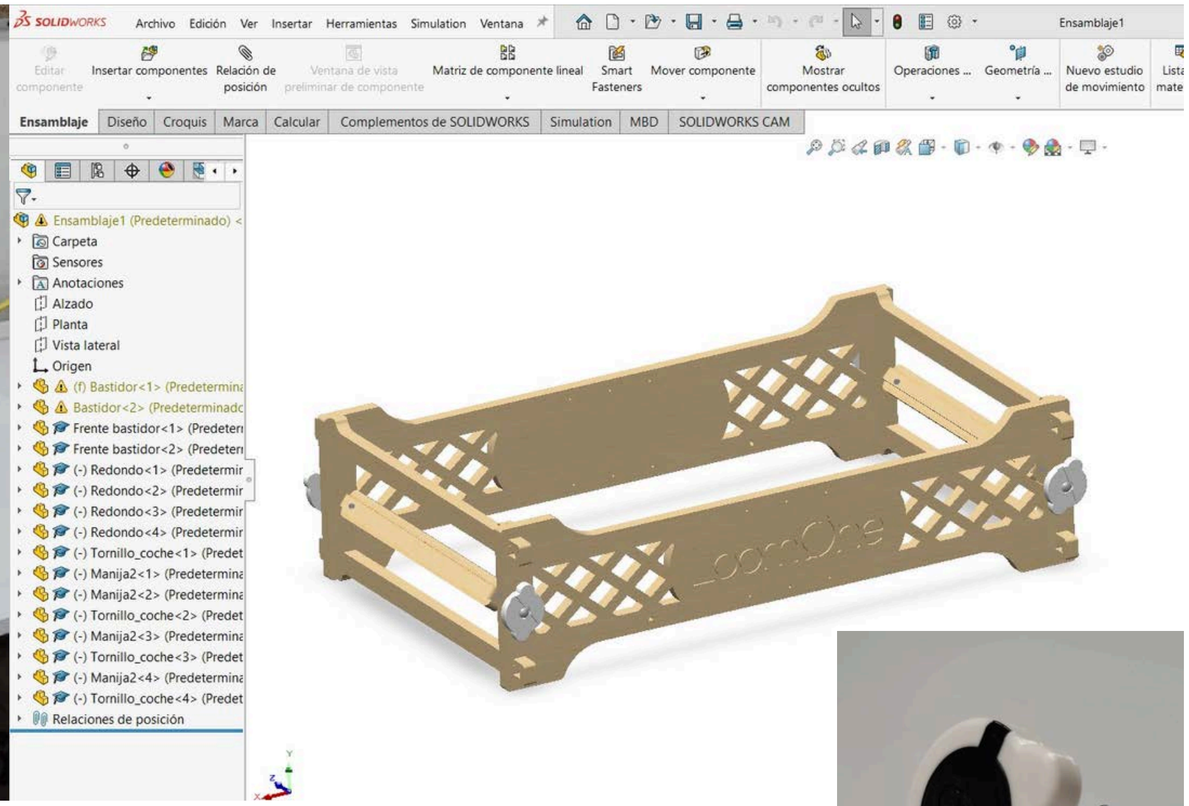


The electronic boards are already manufactured and ready to be connected to the actuator board



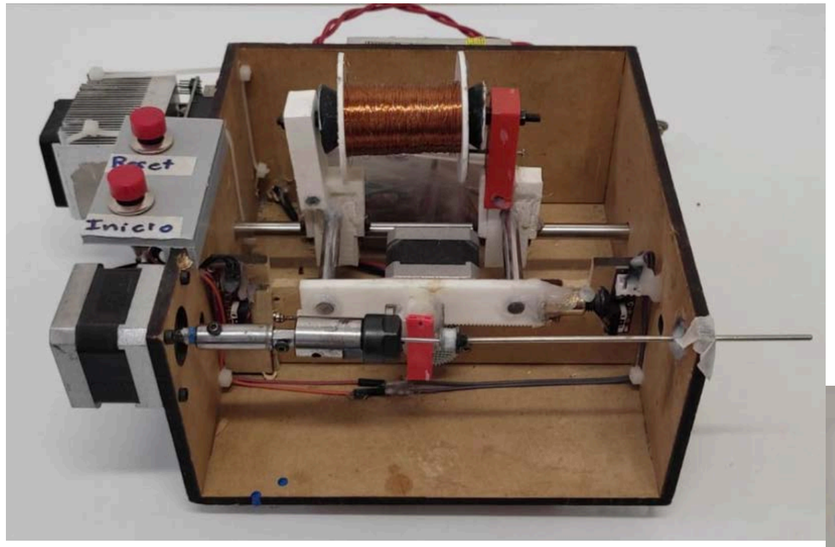
Mechanical design



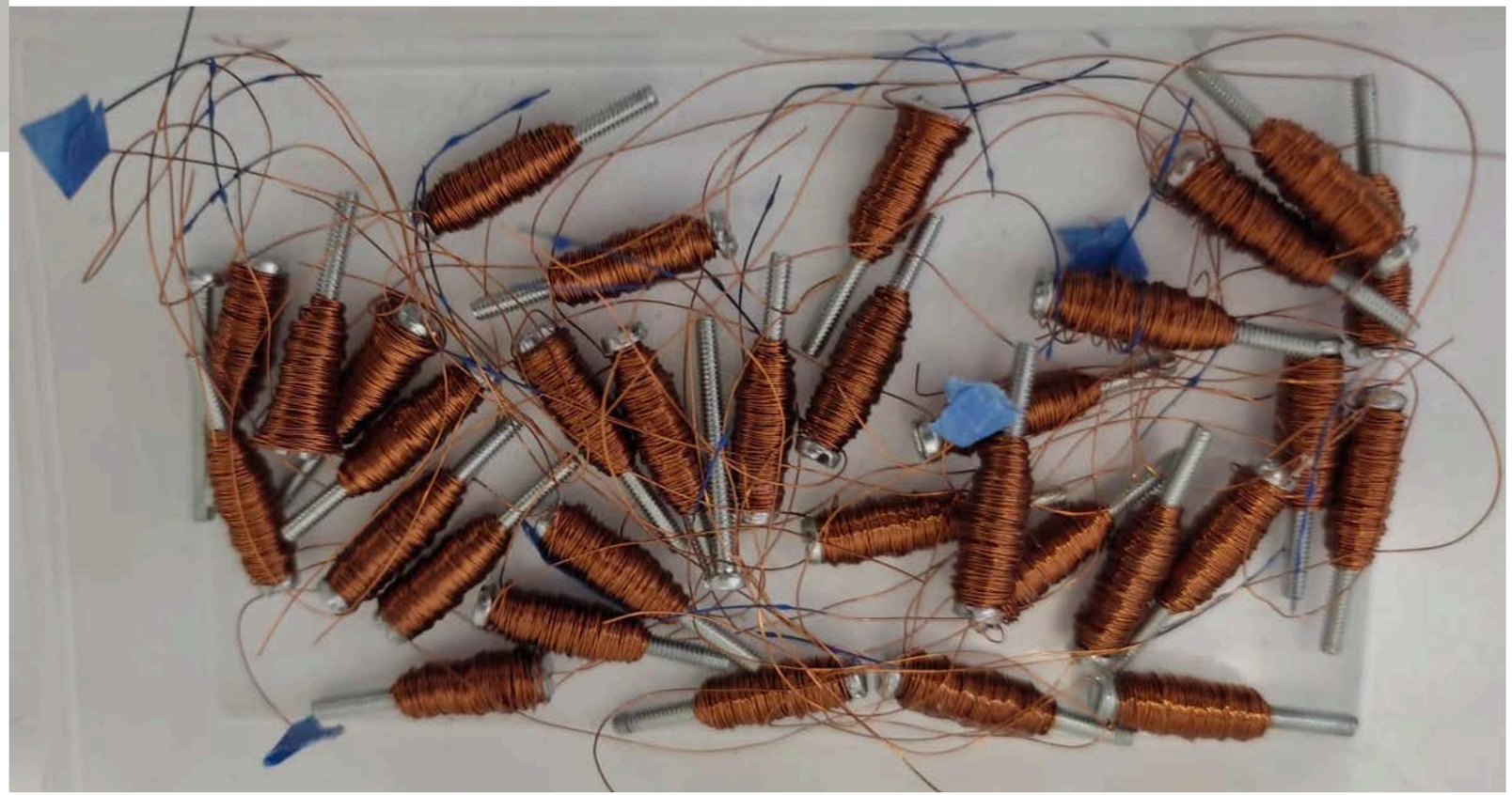


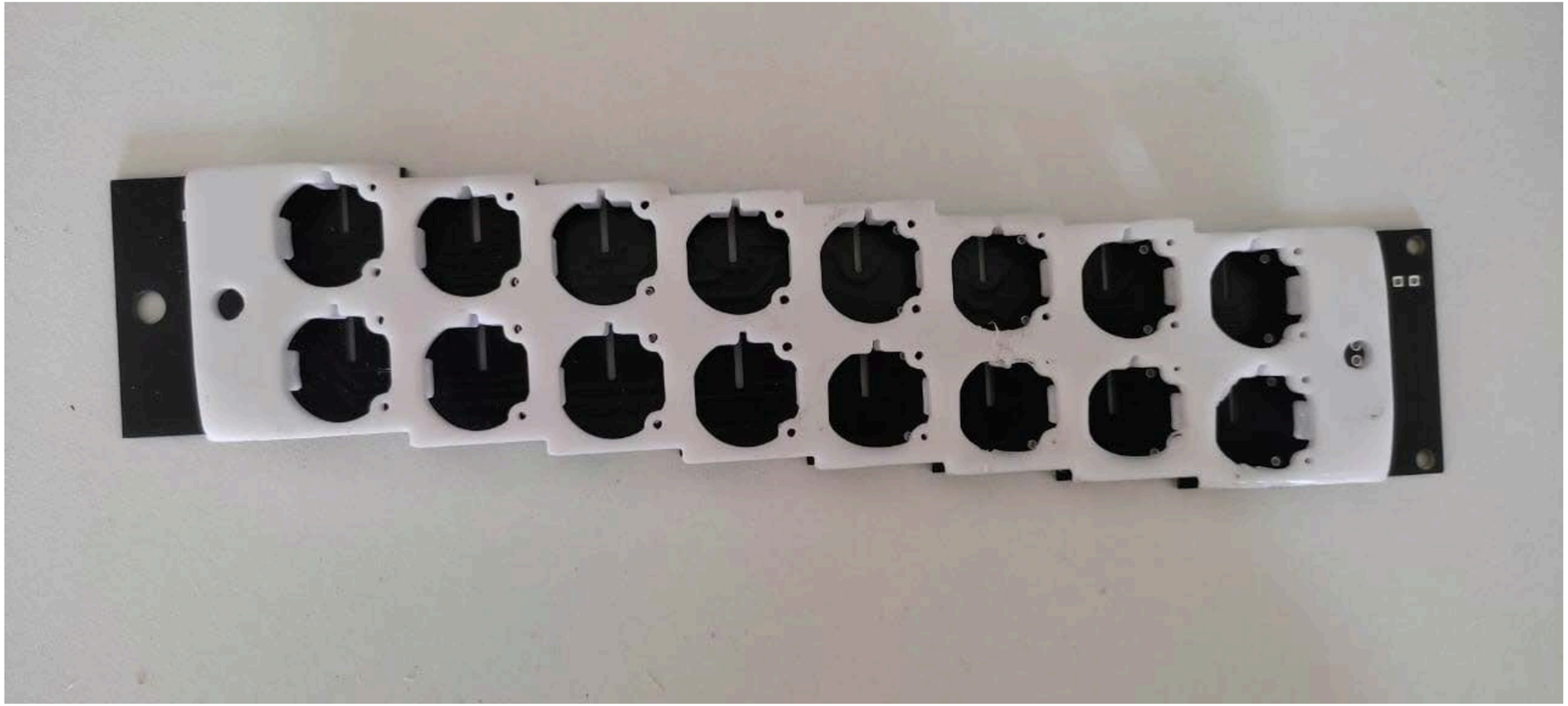
From a FrankenLoom, to a fully Fablable redisigned frame

A part of me in the construction

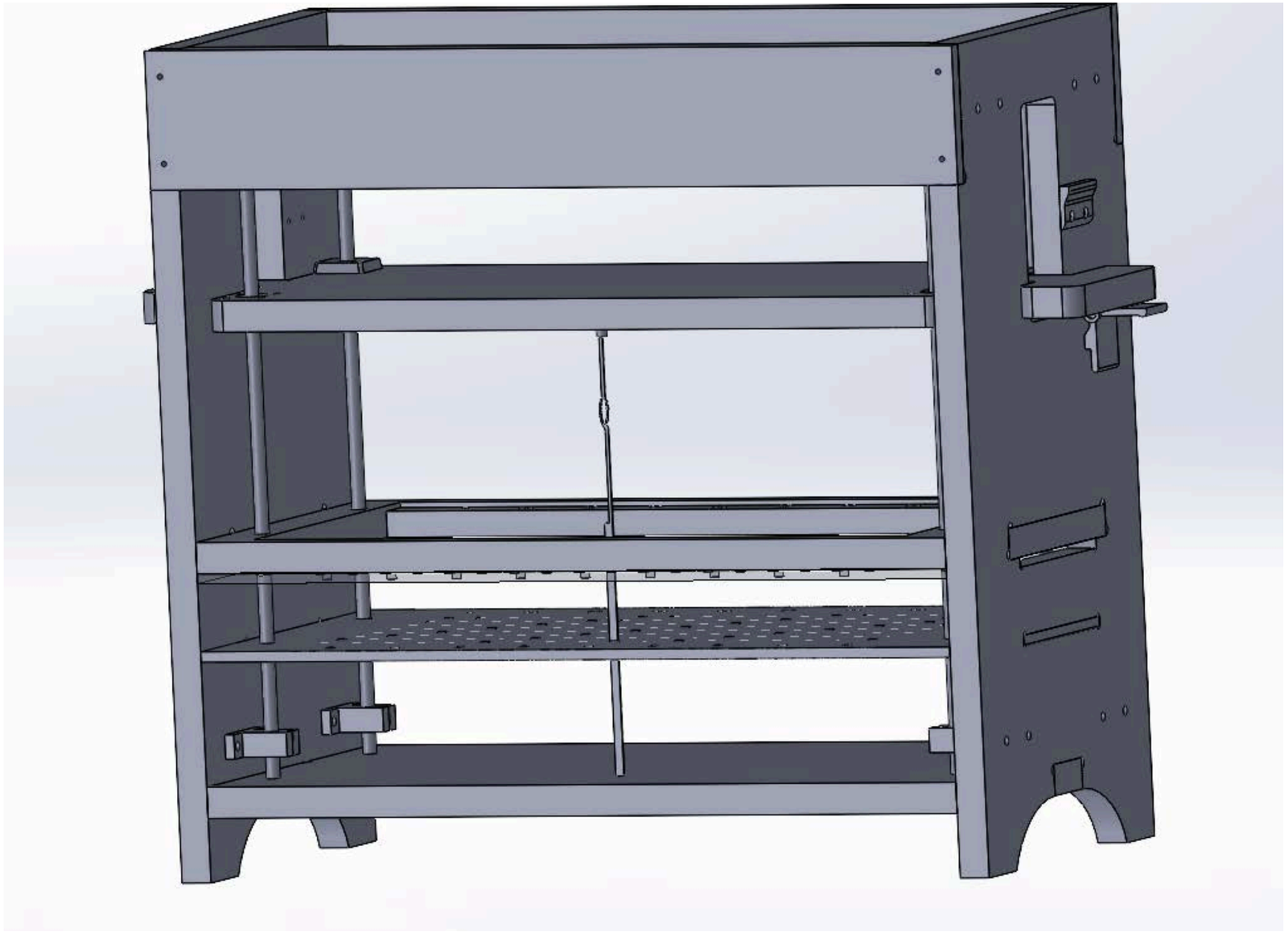


I had to refurbish the old coil maker we used with the digital fabloom to fabricate the electromagnets.





Comparison between the old actuator board and the new electronic board.
I had to re design the entire loom’s body



The Booklet

The Condotier / Giovanni Bellini / 1475 – 1480

01. Abstract
02. Acknowledgements
03. Introduction
04. State of the Art
05. The problem
06. BoM
07. Tools
08. Experimentation process
09. Development process
10.How can you use?
11. Results
12. Conclusion
13. Bibliography
14. About me

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loomone.net
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The VIDEO

LOOM ONE, TEXTILES FOR EVERYONE

Por

ARISTARCO CORTES

FADE IN:

INT – DAY

Voiceover, introduction to 3D printing

THE HISTORY OF 3D PRINTING IS PRESENTED FROM ITS DISCOVERY AROUND 1984. MAKE REFERENCE TO A DYSTOPIAN FUTURE BY TAKING ADVANTAGE OF THE YEAR AND REFERENCING GEORGE ORWELL'S NOVEL.

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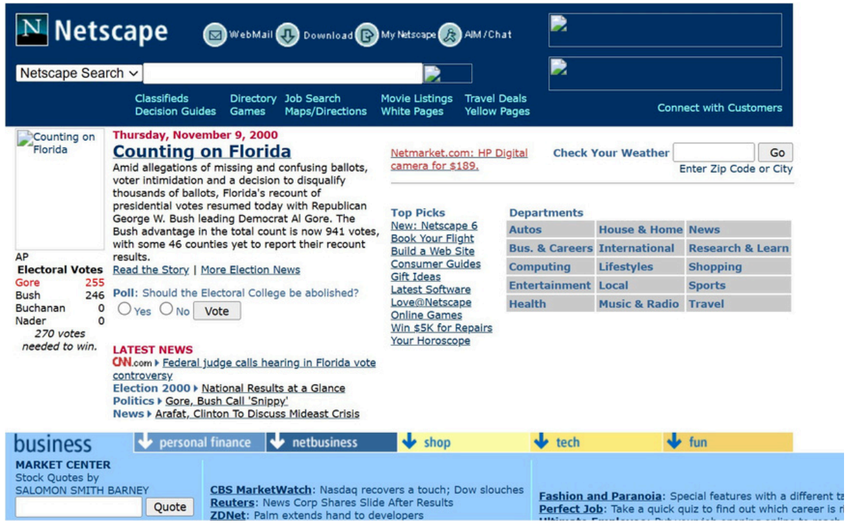
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Counting on Florida
Thursday, November 9, 2000
Counting on Florida
Amid allegations of missing and confusing ballots, voter intimidation and a decision to disqualify thousands of ballots, Florida's recount of presidential votes resumed today with Republican George W. Bush leading Democrat Al Gore. The Bush advantage in the total count is now 941 votes, with some 46 counties yet to report their recount results.
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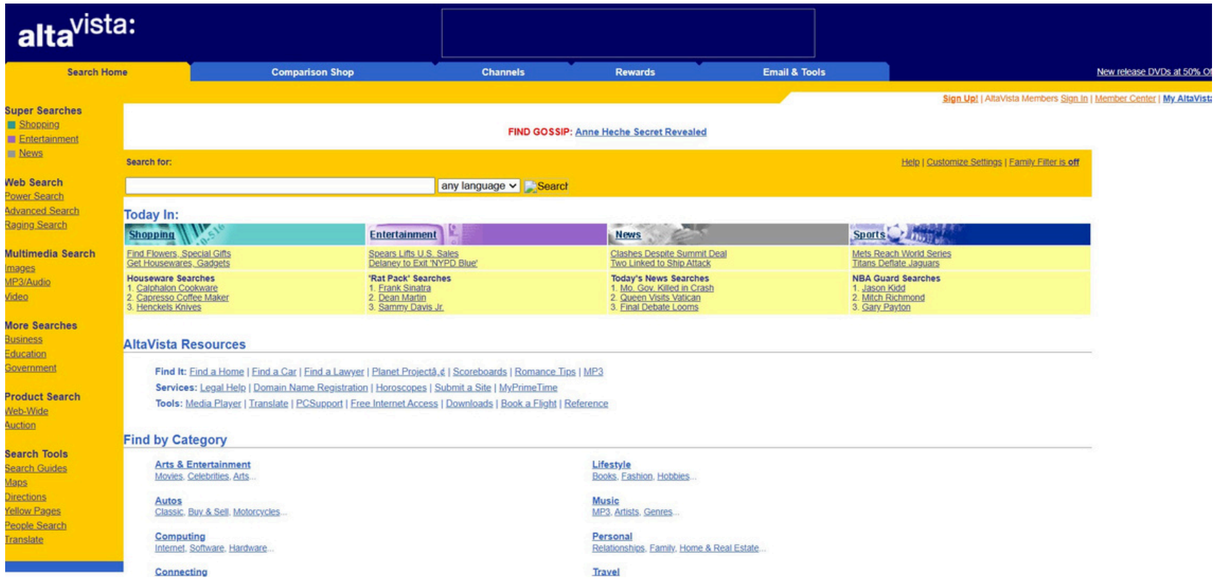
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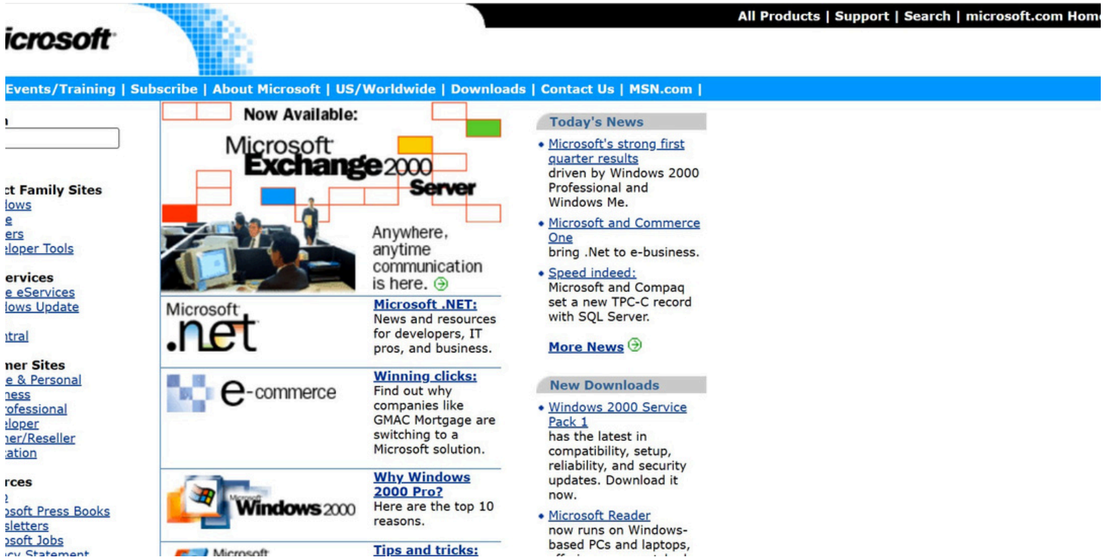
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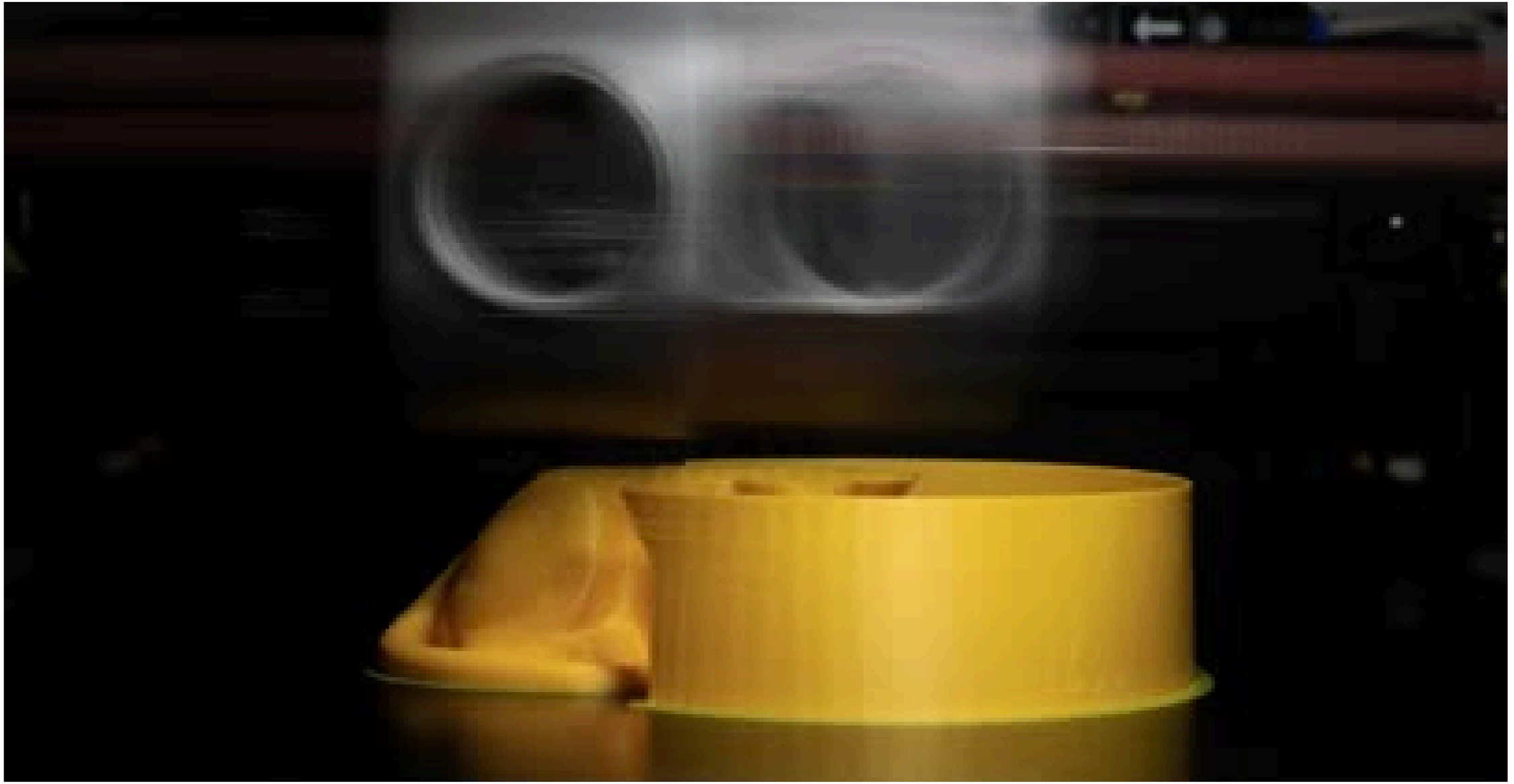

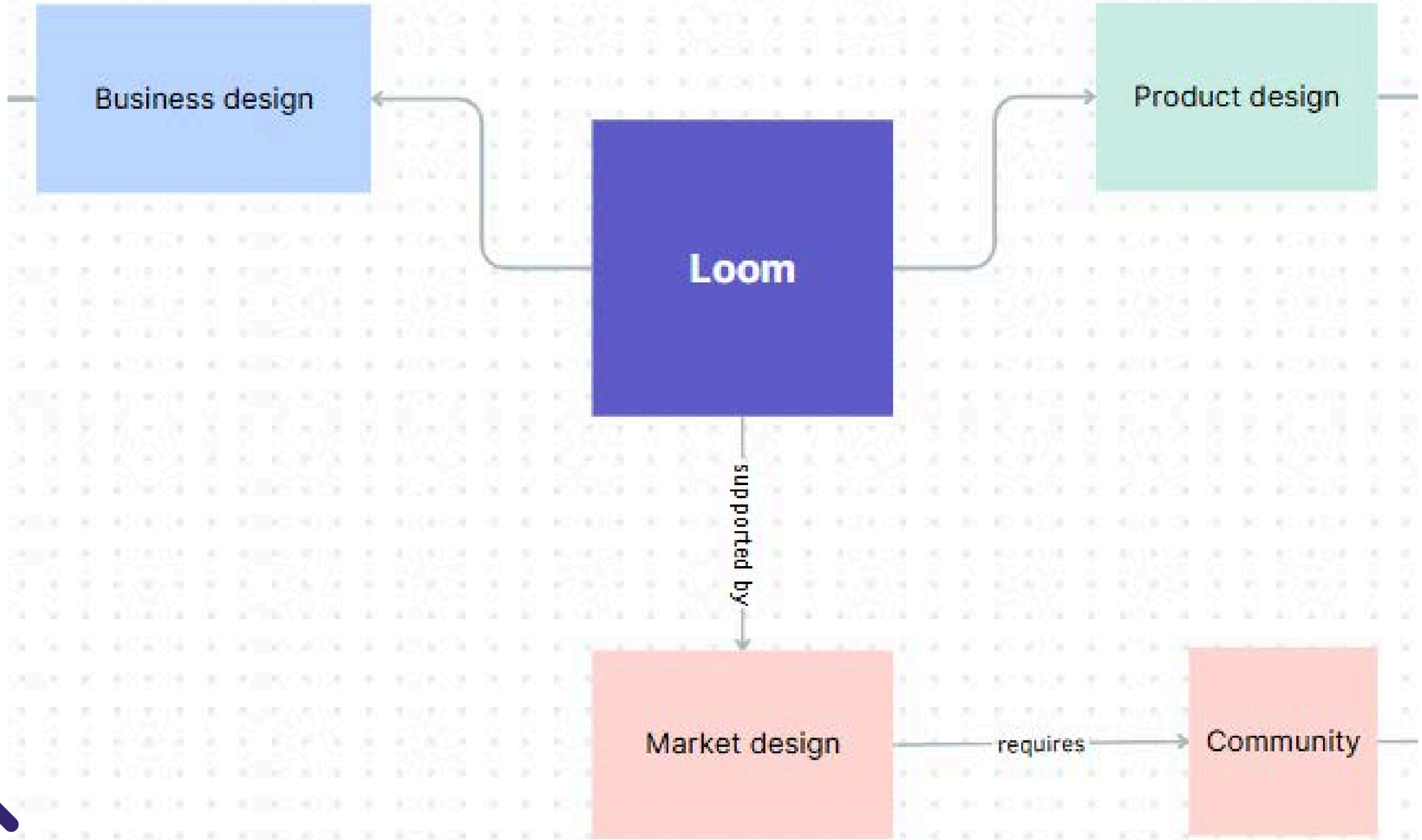

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