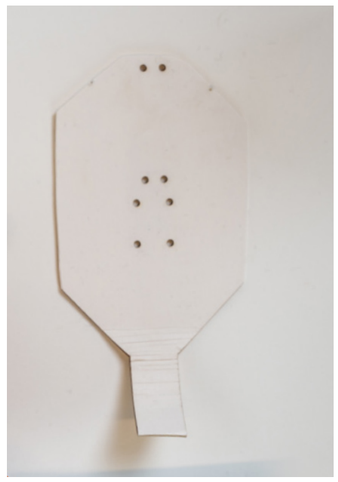
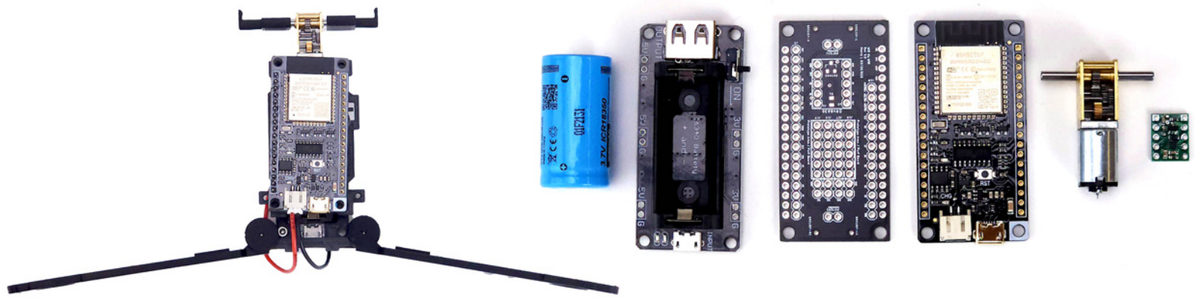
wi-fi-no-wi-fi

Disassembly Guide

SFU SIMON FRASER UNIVERSITY

The material anatomy of the wi-fi-no-wi-fi





Textile shell:

Textile is woven from paper and cotton yarns. As a cellulose it react well to vermicomposting and microbial decomposition. It can also be recycled in the blue bin.

The folds in the weave and supporting pin-tuck stitching allow for the origami form to fold in and out, that could be reused as a scrap fabric or a bag.

Archival board:

Made from alpha-cellulose pulp. As a cellulose, it can be recycled in the blue bin, and reacts well to vermi-composting and microbial decomposition.

Could also be reused.

3D printed PHA:

The mechanism components are 3D printed with PHA (Polyhydroxyalkanoate), a bacterial polymer that reacts well to microbial decomposition, and vermicomposting.

Electronics:

From left to right, LiPo battery, battery shield, breakout board PCB, ESP32 Micro-controller, dual shaft motor, and motor driver.

Cannot be composted.

*** All parts can be disposed of as waste or returned to researchers.**

Dissasembly pathways

Based on what you intend to do with the wi-fi-no-wi-fi, click on the relevant step(s) for further instructions.

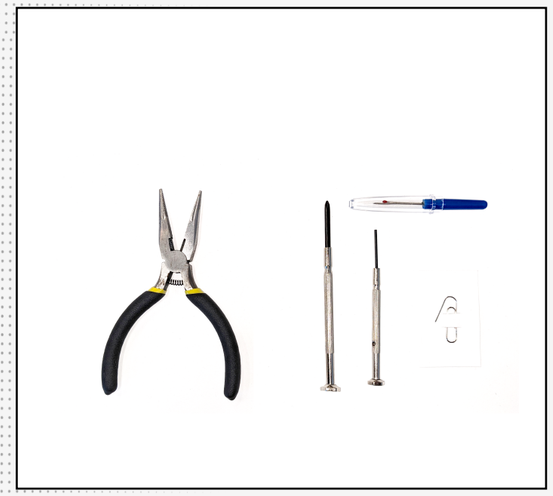
Start here!

Remove Textile Shell

Separate Paper Backing from PHA

Separate PHA from Electronics

Use the tool kit we provided after our visit to assist you through the following pages.



Included in the tool kit:

seam ripper;
screw driver,
either phillips or torque;
bent paperclip;
small pliers

Removing Woven Shell:
Tool: Seam Ripper

How to use a seam ripper

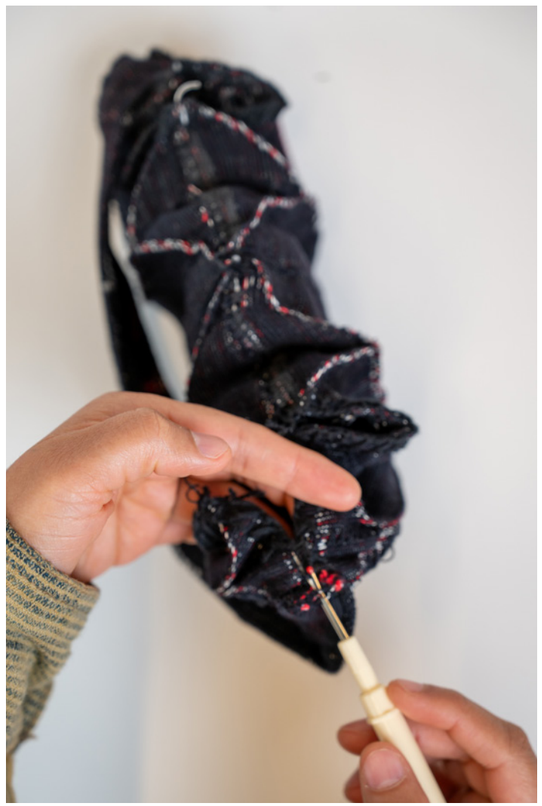
Use the pointed end of the seam ripper top pick at the seam and get between stitches. Turn the seam ripper so the pointed end is underneath the seam, with the red ball positioned above the seam.

While holding the fabric with one hand, and the seam ripper in the other hand, carefully push the seam ripper parallel to the seam and gently part the fabric along the seam.

Continually re-insert the seam ripper as you cut the stitches.

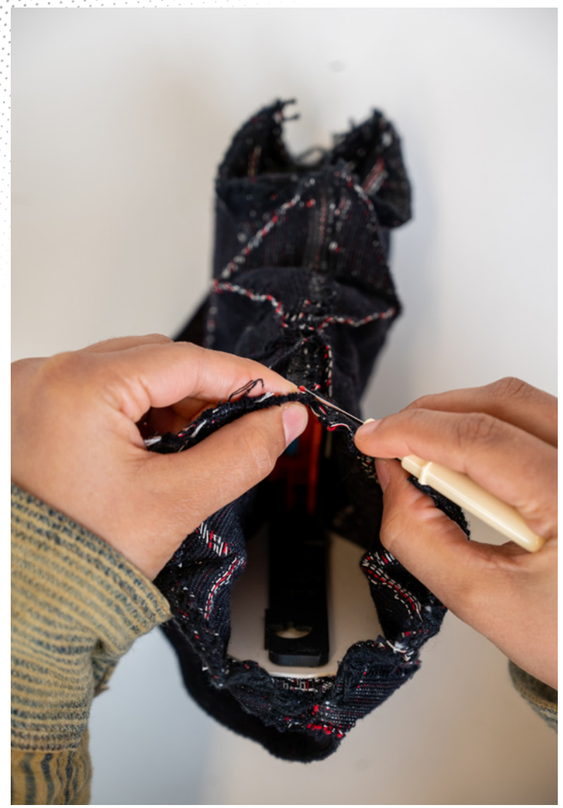
With the wi-fi-no-wi-fi having opened, the seam across the top should now be accessible.

The edges along the fold, (with the top stitching), have been secured with a stitch where the points meet (see picture for reference). Use the seam ripper to open both ends.



Starting from the inside where the straps are attached, open the seam securing the sides together.

Once the sides have been opened, it will be easier to access the large seam across the top.

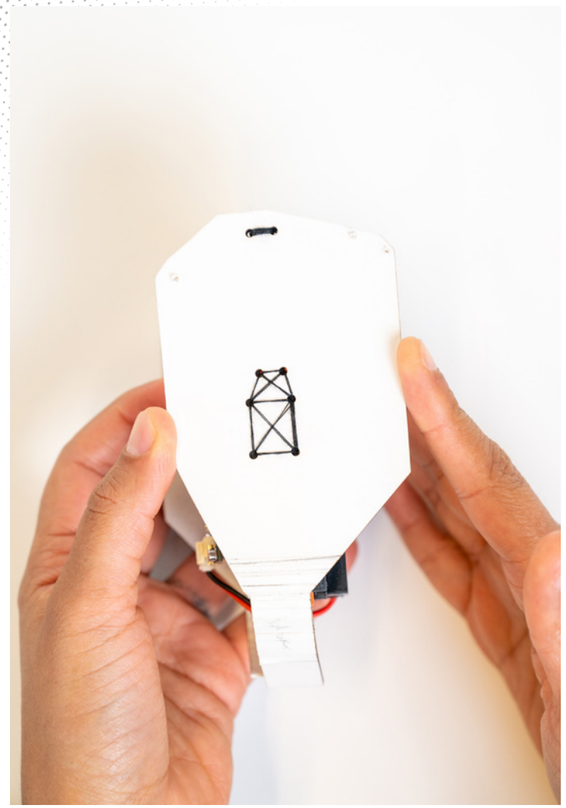


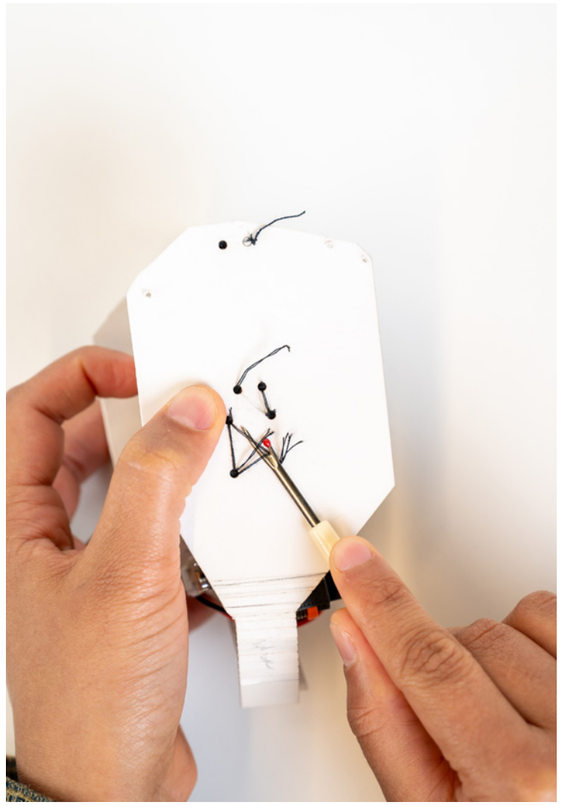
Using the seam ripper, start at one end of the opening and work your way towards the other end of the seam.

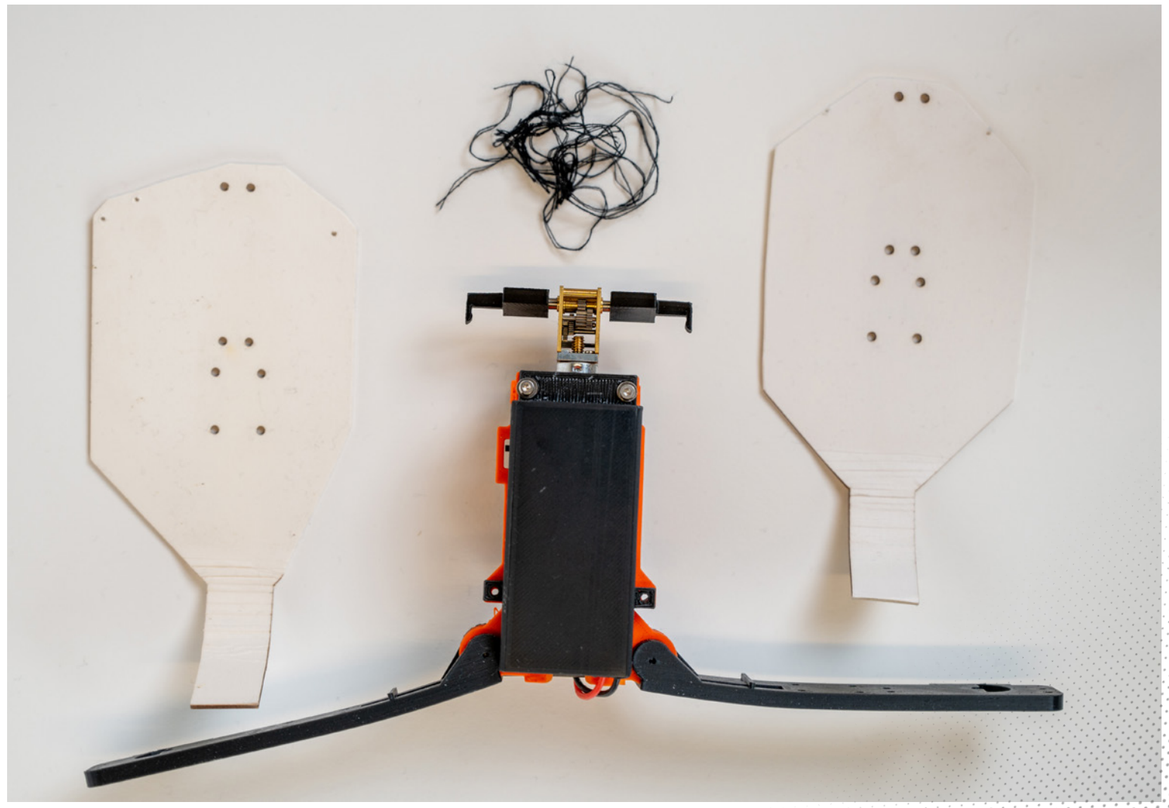
The woven shell should be easy to remove from the remainder of the wifi-no-wifi. In some cases, pull along the straps to remove from the cardboard.

Removing Archival Board:

Tool: Seam Ripper



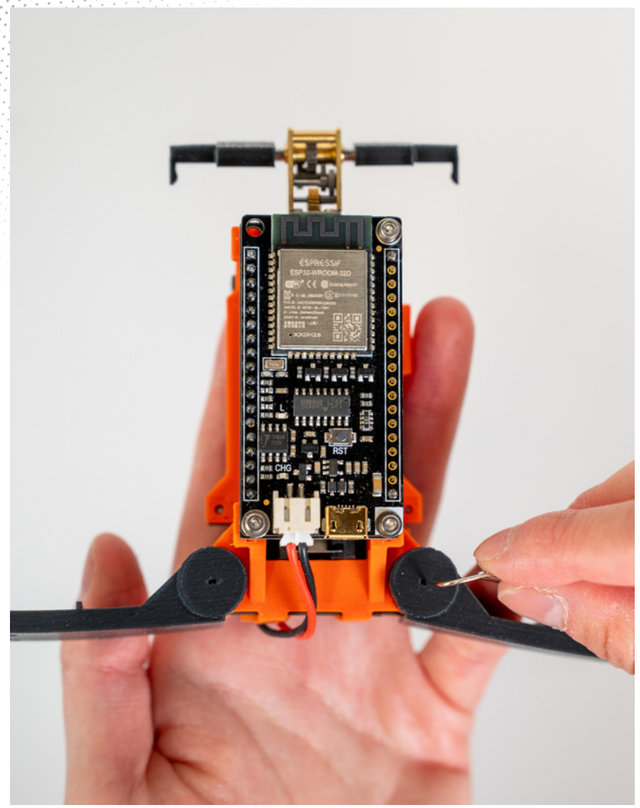




Using the seam ripper, remove any stitches securing the white archival board to the black PHA plastic wing.

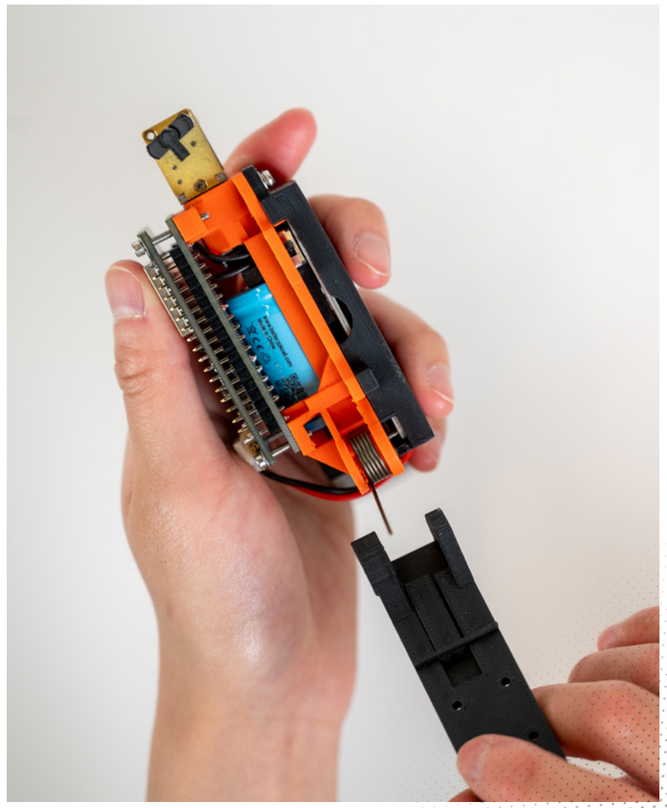
Separating PHA from Electronics

Tools: Paper clip and small pliers

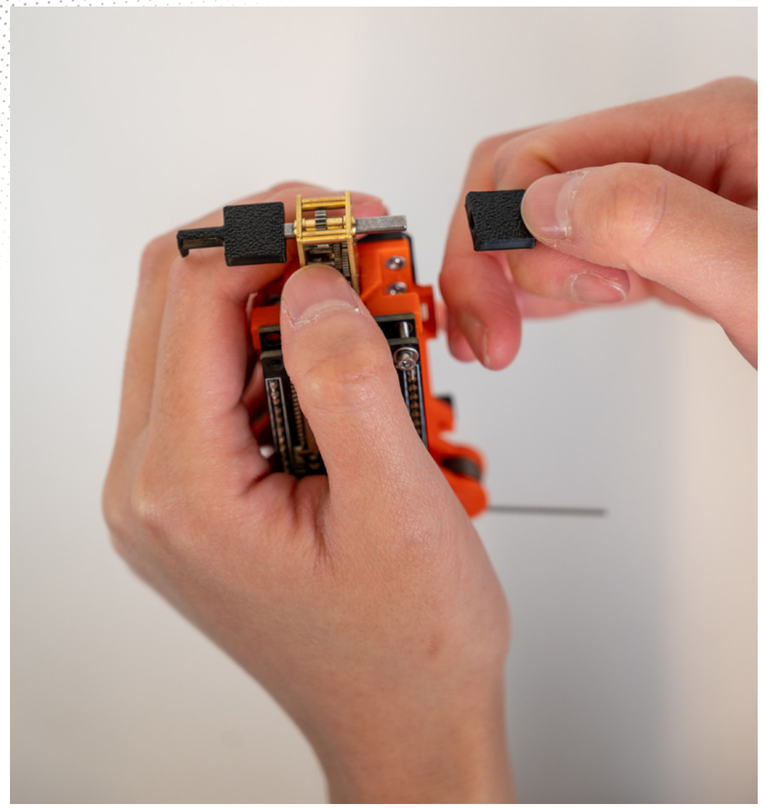


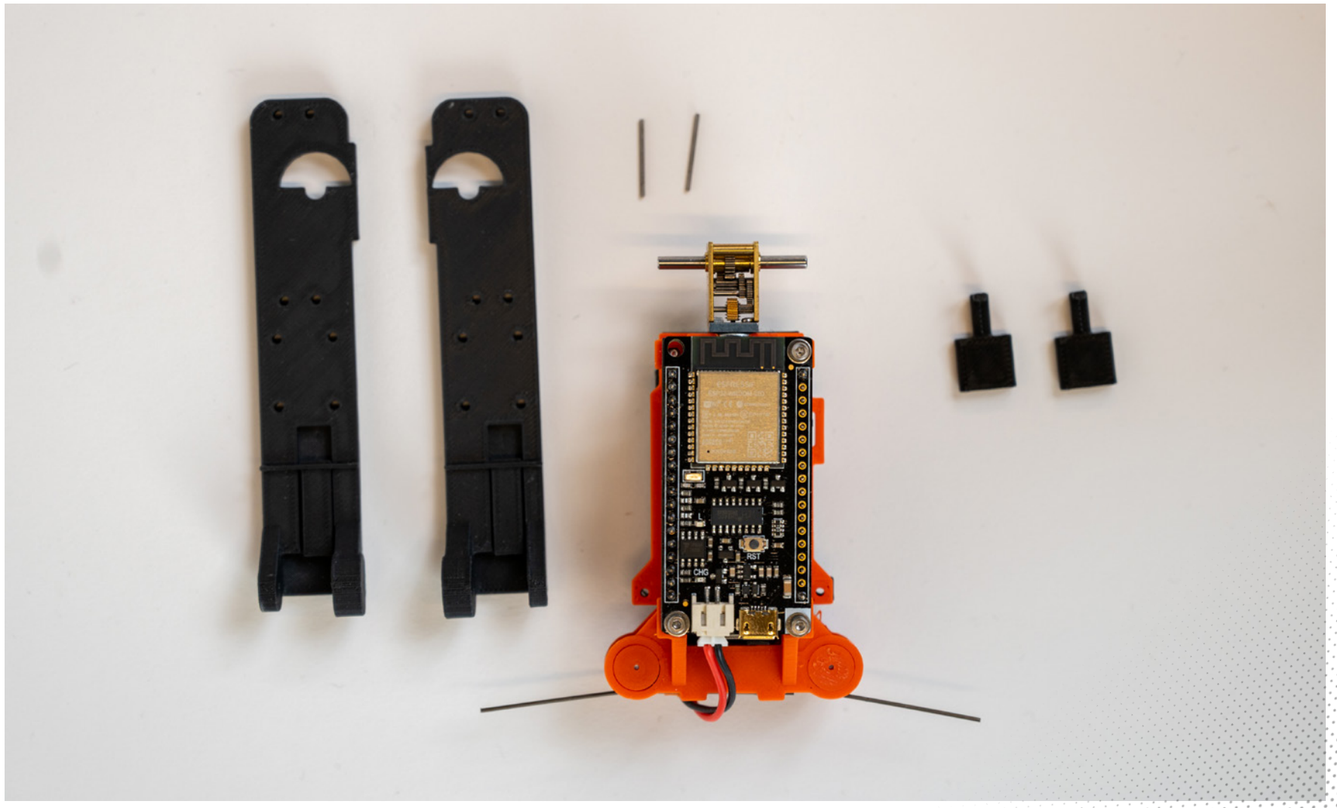
Push paper clip through PHA hole to push out metal pin holding spring in place.

Use pliers to pull out pin.



Pull and wiggle PHA wings straight out.

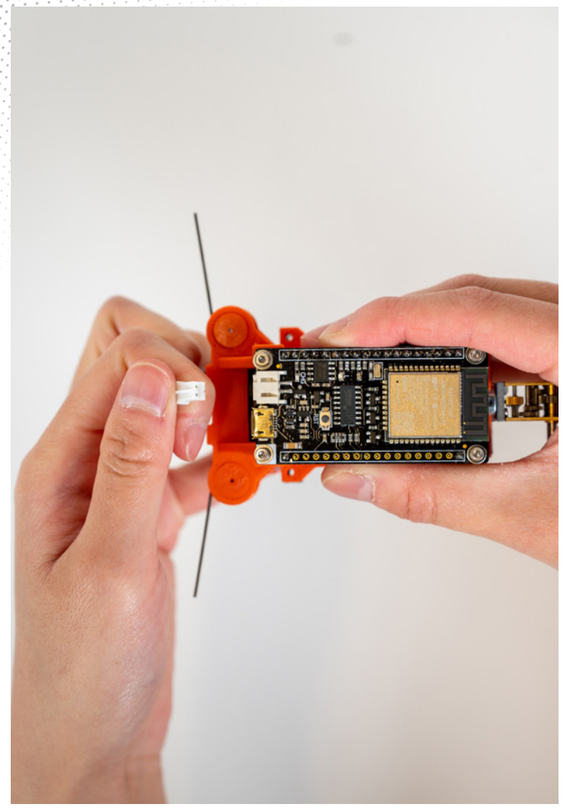




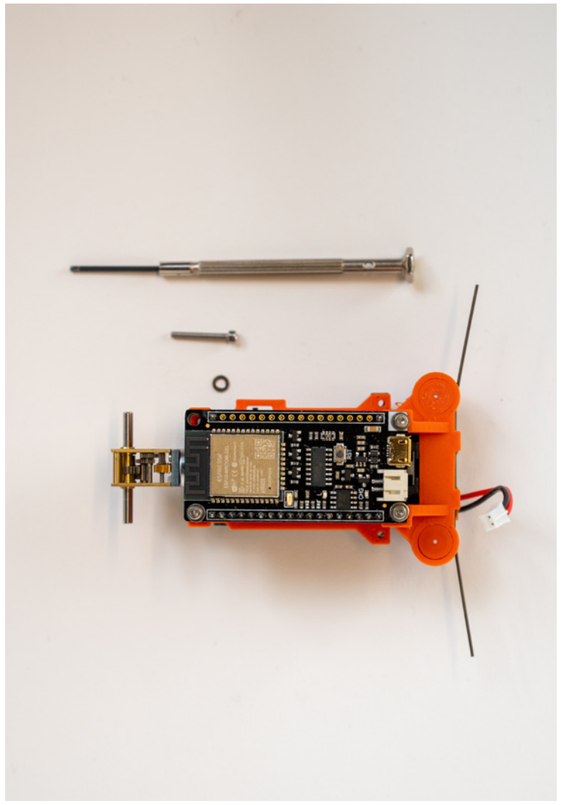
Pull tabs off of the motor.

Separating PHA from Electronics

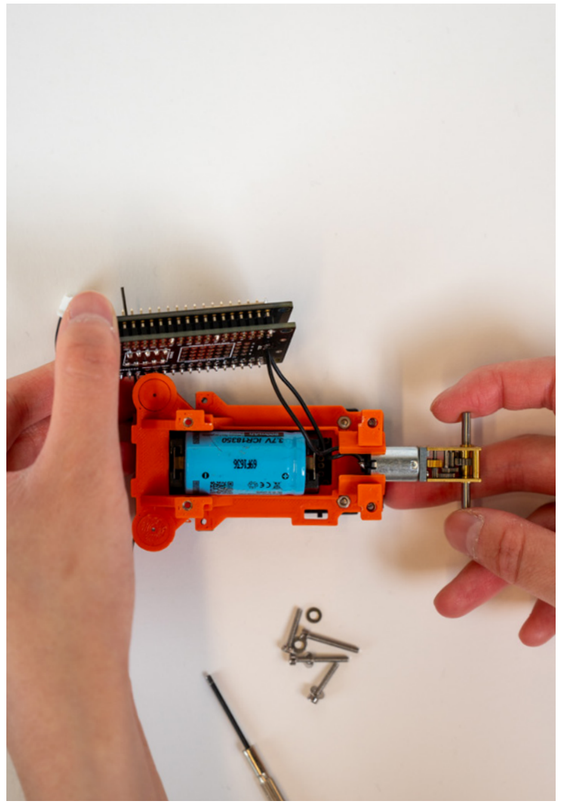
Tools: Screw Driver (either a phillips or torques)



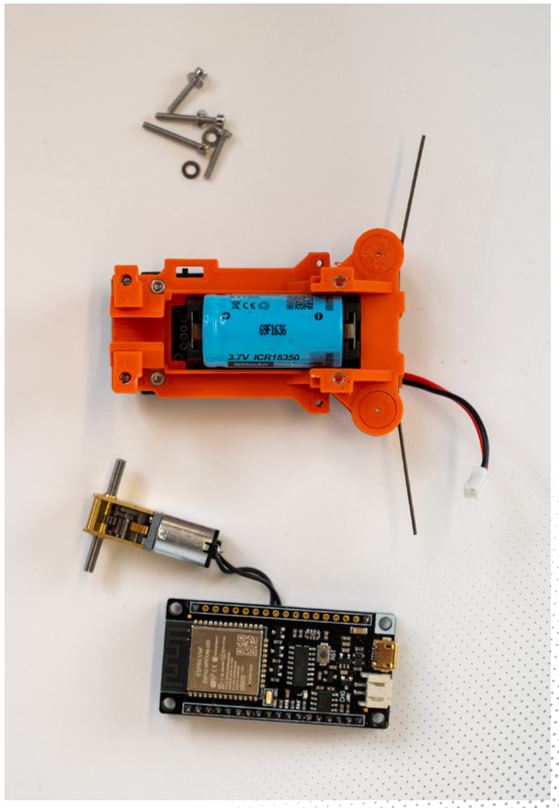
Unplug battery.

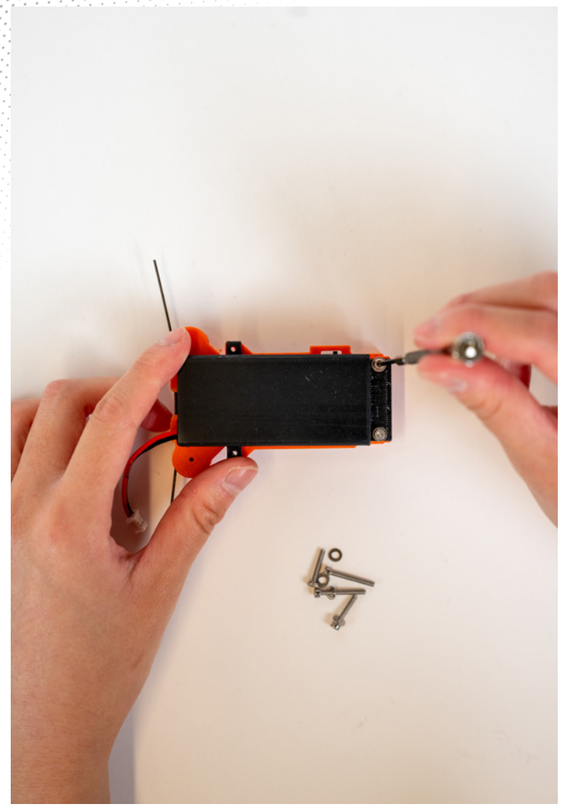


Using the screw driver provided, unscrew the 4 screws securing the PCB board in place.

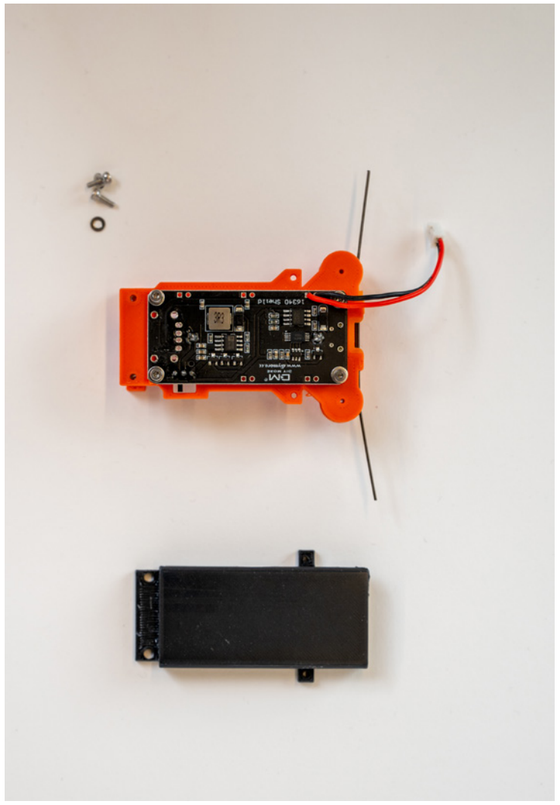


While holding the PCB board and the motor in separate hands, slide it out the motor.





Remove two screws on other side to remove PHA cover.



Once cover is removed, you can access the board underneath. Unscrew the 4 screws keeping it in place.