

Electronics for Physical Computing

Interactive Media Design

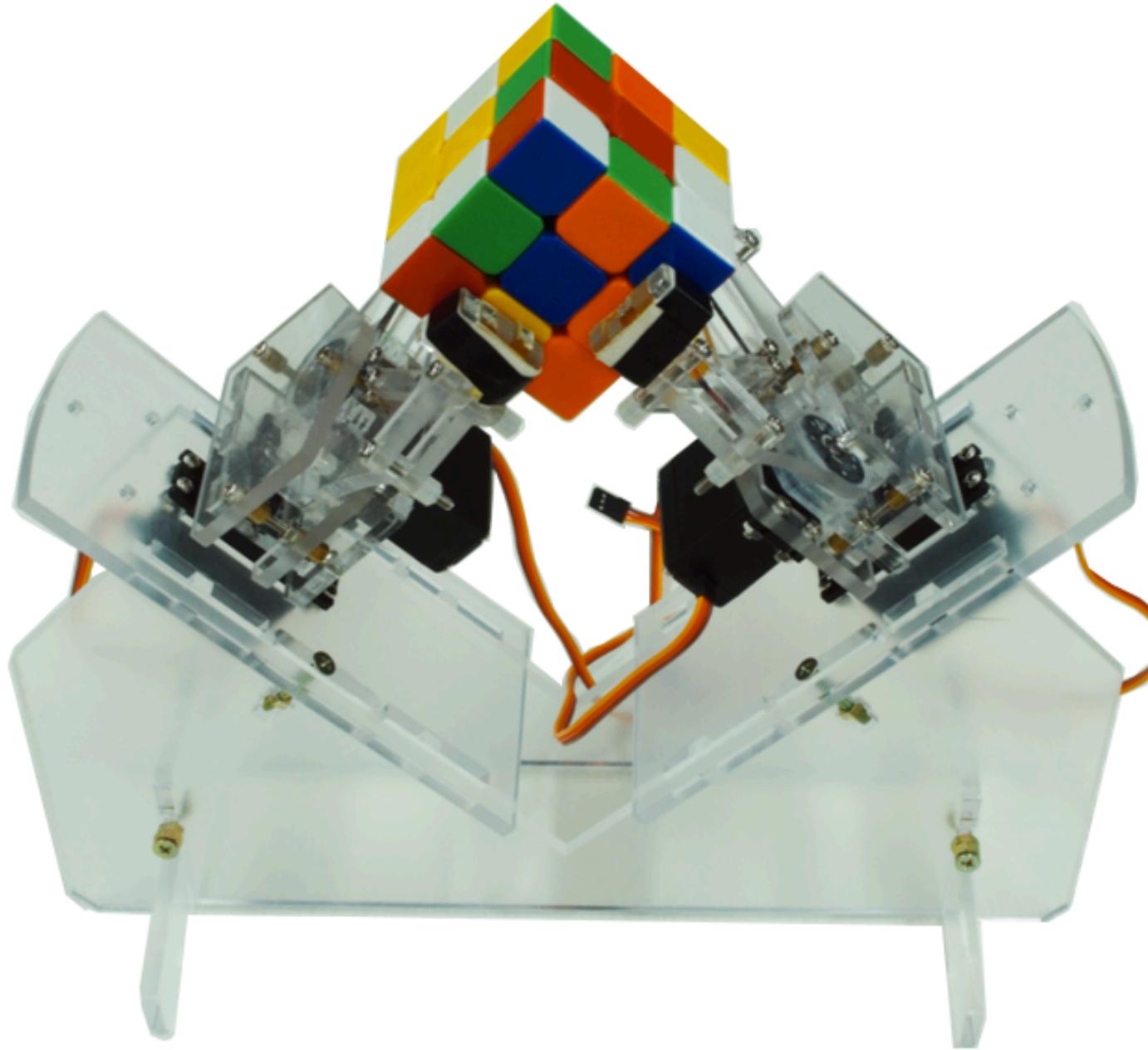
September 8, 2020

Emma Pareschi

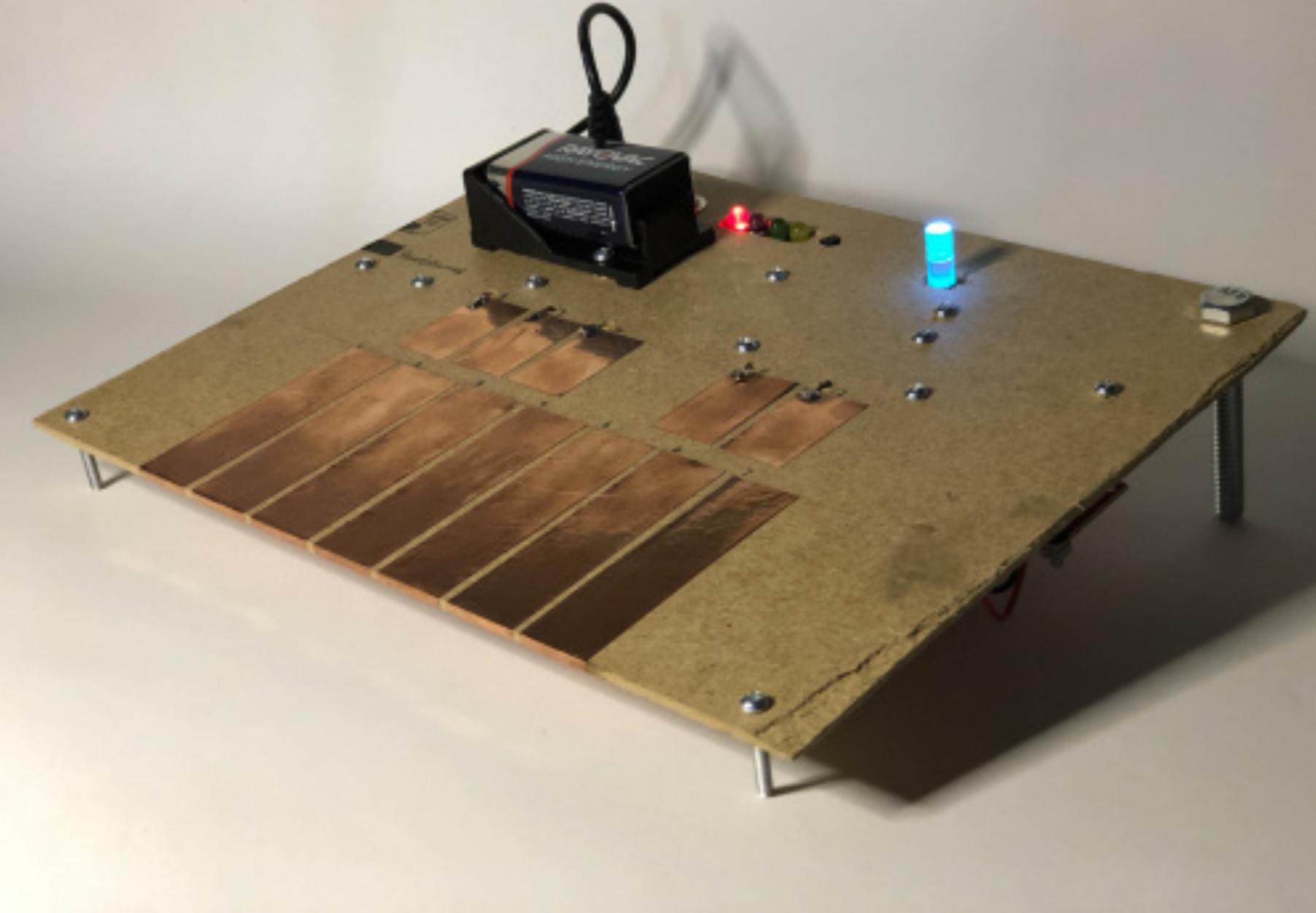
“Technology is neither good nor bad; nor is it neutral.”

Dr. Melvin Kranzberg

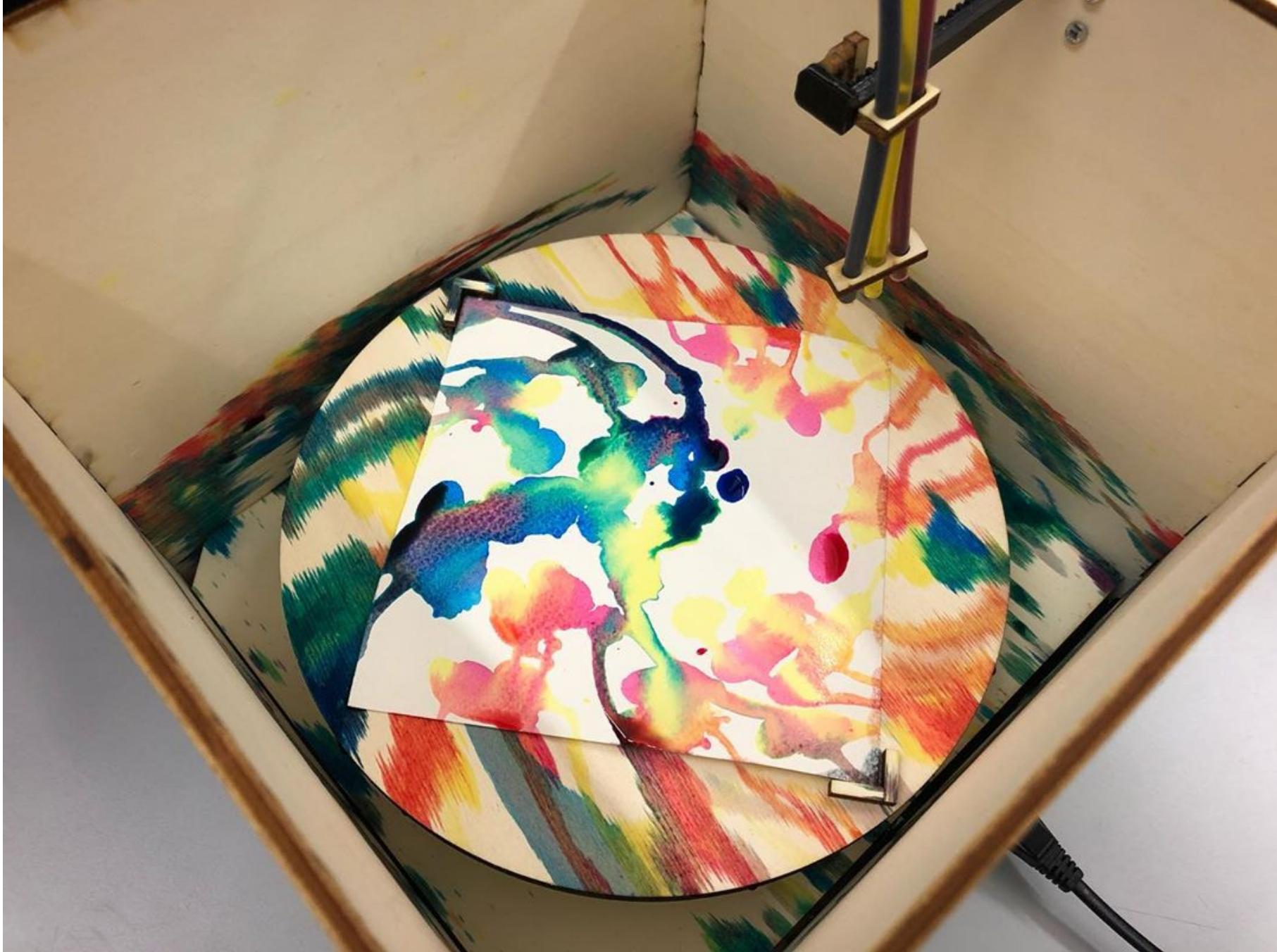
OPEN SOURCE TECHNOLOGY



https://www.linksprite.com/wiki/index.php?title=Cube_Solver_Robot_with_Arduino



<https://www.sparkfun.com/news/3344>



<https://www.instagram.com/p/B5KppaUH-d0/?igshid=1wceu35axpce0>



<https://vimeo.com/30780208>

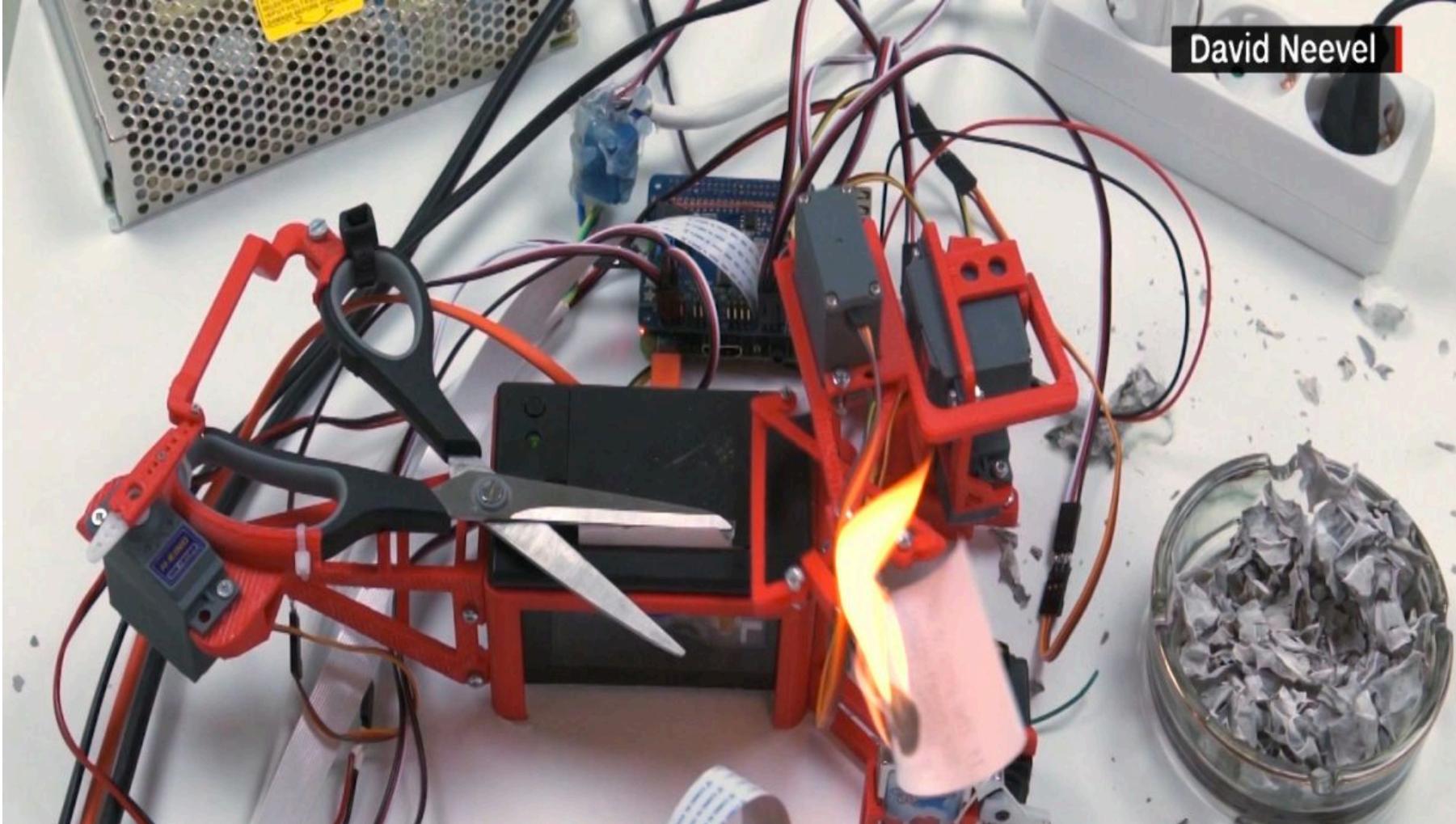


<http://wiki.textile-academy.org/fabricademy2017/students/sofia.guridi/finalproject>



<https://getitmade.com.au/filter/Arduino/Smart-Fragrance-Dispenser>

David Neevel



<https://www.youtube.com/watch?v=drvoghTfFSY>





<https://safecast.org/>

BASIC KIT

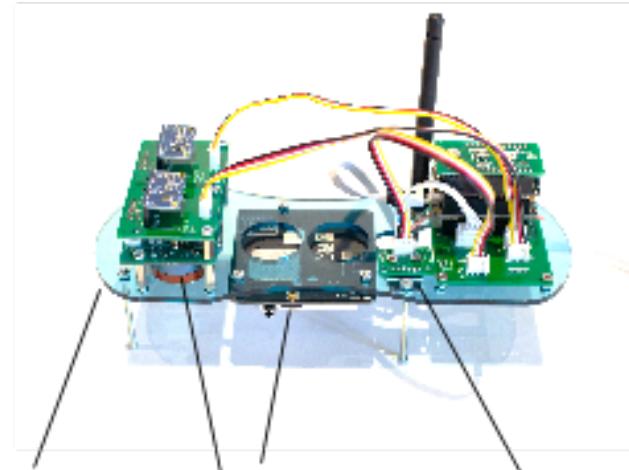


DUST SENSOR
[SDS011]
PM2.5 ($\mu\text{g}/\text{m}^3$)

TEMP/HUM SENSOR
[BME280]
TEMPERATURE (°C)
HUMIDITY (%)



EXTENDED KIT



NO2 SENSOR
[NO2-B43F]
(ppb)

DUST SENSOR
[SDS011]
PM2.5 ($\mu\text{g}/\text{m}^3$)

O3 SENSOR
[OX-B431]
(ppb)

TEMP/HUM SENSOR
[BME280]
TEMPERATURE (°C)
HUMIDITY (%)



What do the project have in common?

- no need of a technical background
- open source tools
- documentation

Documentation

If it is not documented, it didn't exist.



PROJECT HUB

ADD PROJECT

SEARCH PROJECTS

SIGN IN

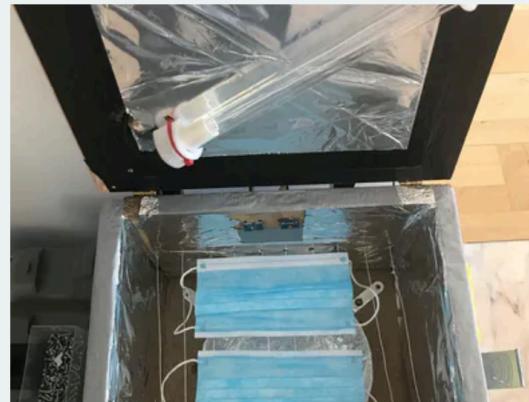
87 covid19 projects page 2



Smart Disinfection and Sanitation Tunnel

Project tutorial by Yash Nayak

41,479 VIEWS 50 COMMENTS 94 RESPECTS



Face-Masks Disinfection Device — needlab

Project tutorial by Team NeedLab

26,612 VIEWS 44 COMMENTS 81 RESPECTS



Open Source Pulse Oximeter for COVID-19

Project tutorial by Arduino "having11" Guy

40,103 VIEWS 22 COMMENTS 109 RESPECTS

<https://create.arduino.cc/projecthub/projects/tags/covid19>

Arduino

“**Physical Computing** is about prototyping with electronics, turning sensors, actuators and microcontrollers into materials for designers and artists.”

“It involves the design of interactive objects that can communicate with humans using sensors and actuators controlled by a behaviour implemented as software running inside a microcontroller.”

Massimo Banzi, Tinker.it & Arduino Co-Founder

Hardware



Software

```
Blink | Arduino 1.8.0
File Help Examples Sketches Tools Window Help
Blink
This example code is in the public domain.
modified 8 May 2014
by Scott Stoll
led
led.pin = 13;
void setup() {
  // the setup function runs once when you press reset or power the board
  led.set();
}

// the loop function runs over and over again forever
void loop() {
  led.toggle();
  delay(1000); // turn the LED on (HIGH) is the voltage
  delay(1000); // wait for a second
  led.toggle();
  delay(1000); // turn the LED off by making the vol-
  delay(1000); // wait for a second
}
```

A screenshot of the Arduino IDE interface. The title bar says "Blink | Arduino 1.8.0". The code editor contains the classic "Blink" sketch. The code defines a setup function that initializes the LED pin (pin 13) and a loop function that toggles the LED every second using digitalWrite and delay functions.

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arduino Forum

Using Arduino

- Installation & Troubleshooting
For problems with Arduino itself, NOT your project
Last post: Today at 07:30 am "firm" executable file n... by Topkhung 67,313 Posts 15,896 Topics
- Project Guidance
Advice on general approaches or feasibility
Last post: Today at 09:33 am Re: Arduino shield L293D by chummer1010 328,263 Posts 45,241 Topics
- Programming Questions
Understanding the language, error messages, etc.
Last post: Today at 08:54 am Re: Problem with EEPROM ... by phoz_45 455,119 Posts 55,397 Topics
- General Electronics
Resistors, capacitors, breadboards, soldering, etc.
Last post: Today at 09:30 am Re: Arduino the right way... by derocco 159,694 Posts 15,984 Topics

A screenshot of the Arduino Forum website. The top navigation bar includes links for Home, Buy, Download, Products, Learning, Forum, Support, Blog, Alerts, Unread Posts, and Updated Topics. Below this is a link to the arduino Forum. The main content area shows a list of forum categories with their respective post counts and topic counts. The "Using Arduino" category is expanded, showing threads for Installation & Troubleshooting, Project Guidance, Programming Questions, and General Electronics.