

Featured Projects

Digital
Fabrication

Housing



Fab Lab House made by Fab Lab Barcelona for the Solar Decathlon Europe in 2012.
The house was the winner of People's Choice category.



Fab Lab Barcelona is one of oldest Fab Labs in the Network. It is hosted by the Institute of Advanced Architecture of Catalonia and has a **strong focus** on **sustainable buildings** and lifestyle.

They have created some of the most amazing solar houses like the **Fab Lab House** (previous page), the **Endesa Pavilion** (images on the left side of this page) and **Fab Condenser** (on the top right of the page). These buildings are parametrically designed to adapt to their environment and use natural resources and energy.

It is a great example on how a **Fab Lab** gathers a community of artists, architects and engineers to **collaborate together**.

<http://www.fablabhouse.com>



The **WikiHouse** project was started as an exploration into how the web could be used to transform the way we make homes. Their mission is to **put the tools & knowledge to design, manufacture and assemble** beautiful, low-cost, low-carbon **buildings** into the hands of every citizen, community and business. WikiHouse is the first building system designed for that kind of ecosystem.

Ultimately, it is rooted not in any one particular technology, but in a few fundamental design principles.

<https://www.wikihouse.cc/>

Network

FabFi is an **open-source, city-scale, wireless mesh networking system**. It is an inexpensive framework for sharing wireless internet from a central provider across a town or city. It was developed originally by **FabLab Jalalabad** to provide high-speed internet to parts of Jalalabad, Afghanistan and Kenya.



<https://code.google.com/archive/p/fabfi/>

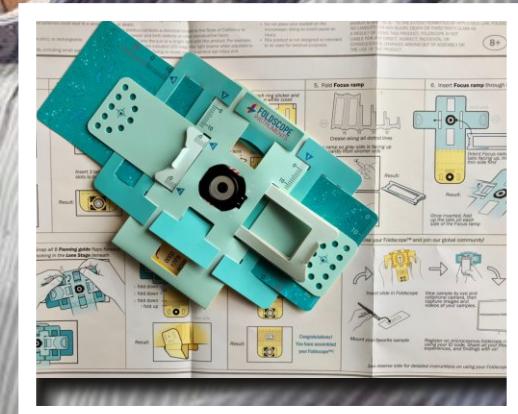
Biology



To start up an independent and open **biolab** it is crucial to get affordable lab equipment. The team at **Gaudi Labs** designed and fabricated most of the tools they use **using the tools in the Fab Lab**. These are do it your self **open source** and are built from widely **recycled parts** found in consumer such as DVD drives, hard disks and equipment is used in educational like <http://bio.academany.org/>

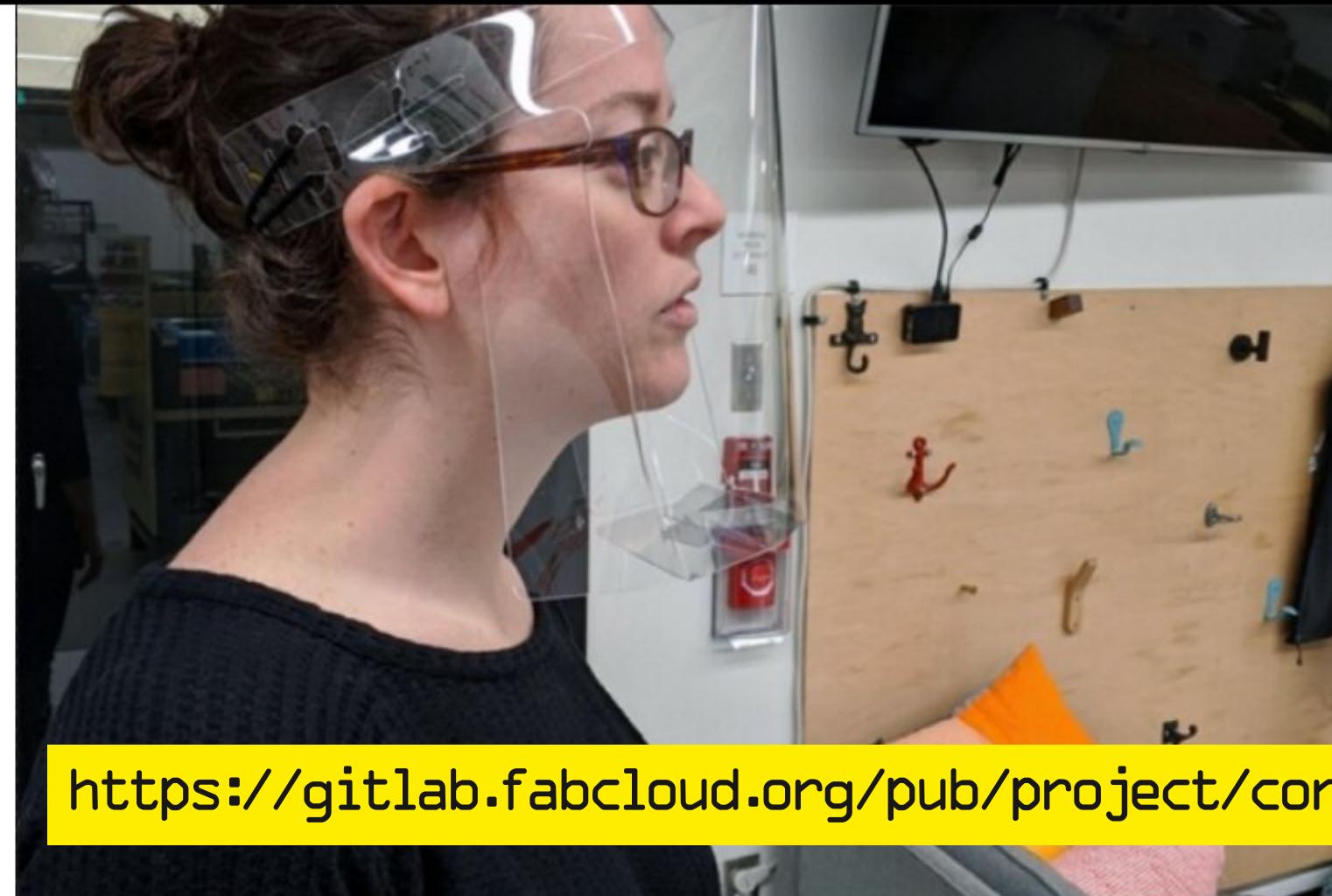
<http://www.gaudi.ch/GaudiLabs/>

Manu Prakash presenting **Foldscope**, an ultra low-cost, foldable paper microscope during TED conference. Developed at **Prakash Lab** in Stanford



<http://web.stanford.edu/group/prakash-lab>

Disaster response



<https://gitlab.fabcloud.org/pub/project/coronavirus/tracking>

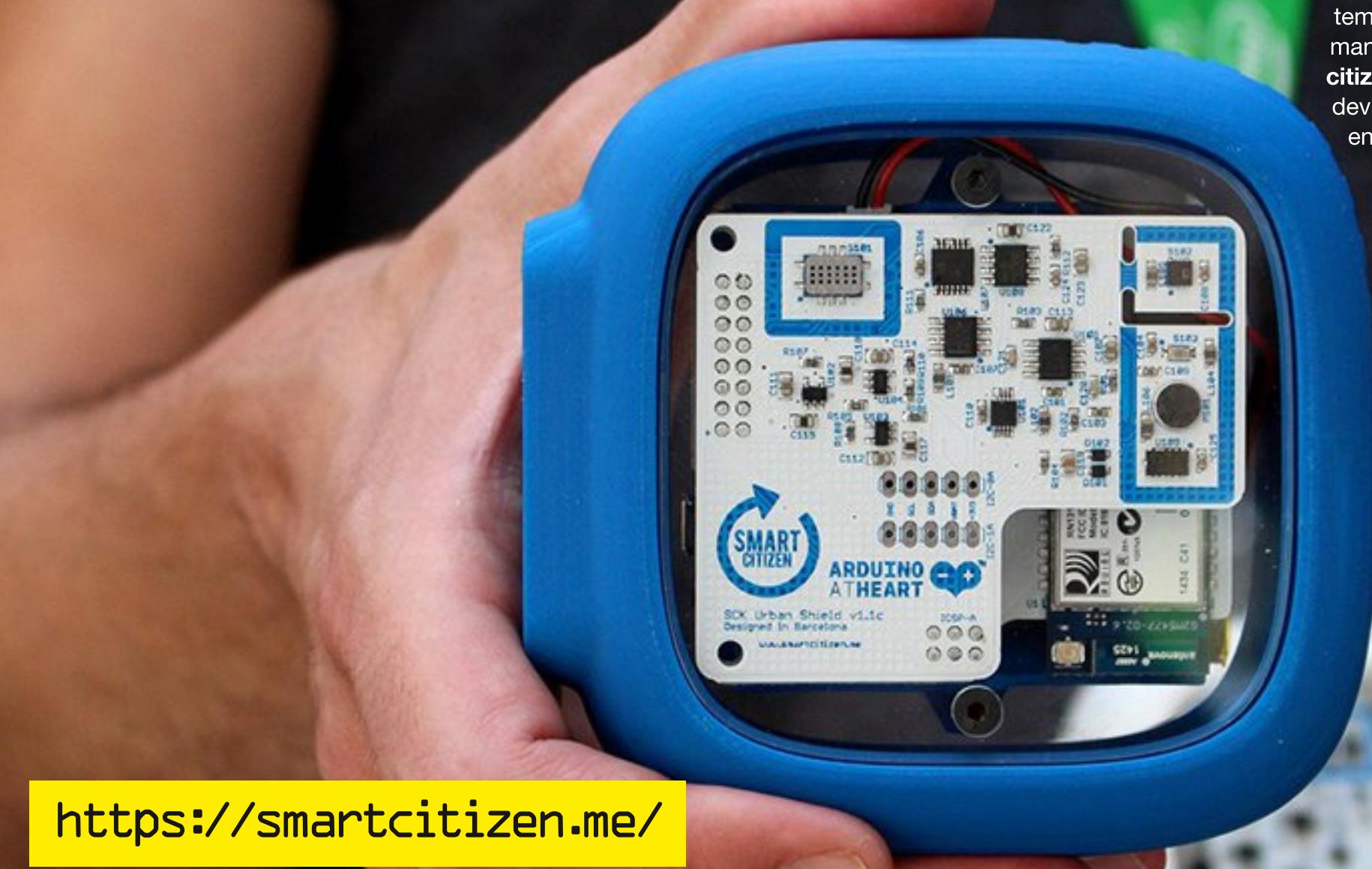
A team from MIT has designed disposable face shields that can be mass produced quickly to address hospitals' needs nationwide.

On the left, **Robyn Goodner**, who serves as a maker technical specialist for Project Manus, models the **face shield design** in the **Metropolis Makerspace**.

MIT initiates mass manufacture of disposable face shields for Covid-19 response

Environment

Developed at **Fab Lab Barcelona** and successfully crowd-funded twice. The **SmartCitizen** is a platform and an open-source device that **monitors** environmental parameters like **air pollution**, noise, temperature, humidity and many more. It **enables** the **citizens** to use other peers devices to monitor their environment.



<https://smartcitizen.me/>



Textiles

Fabricademy is a transdisciplinary course that focuses on the development of **new technologies** applied in the **textile industry**, in its broad range of applications, from the fashion industry to the upcoming wearable market.

<https://textile-academy.org/>

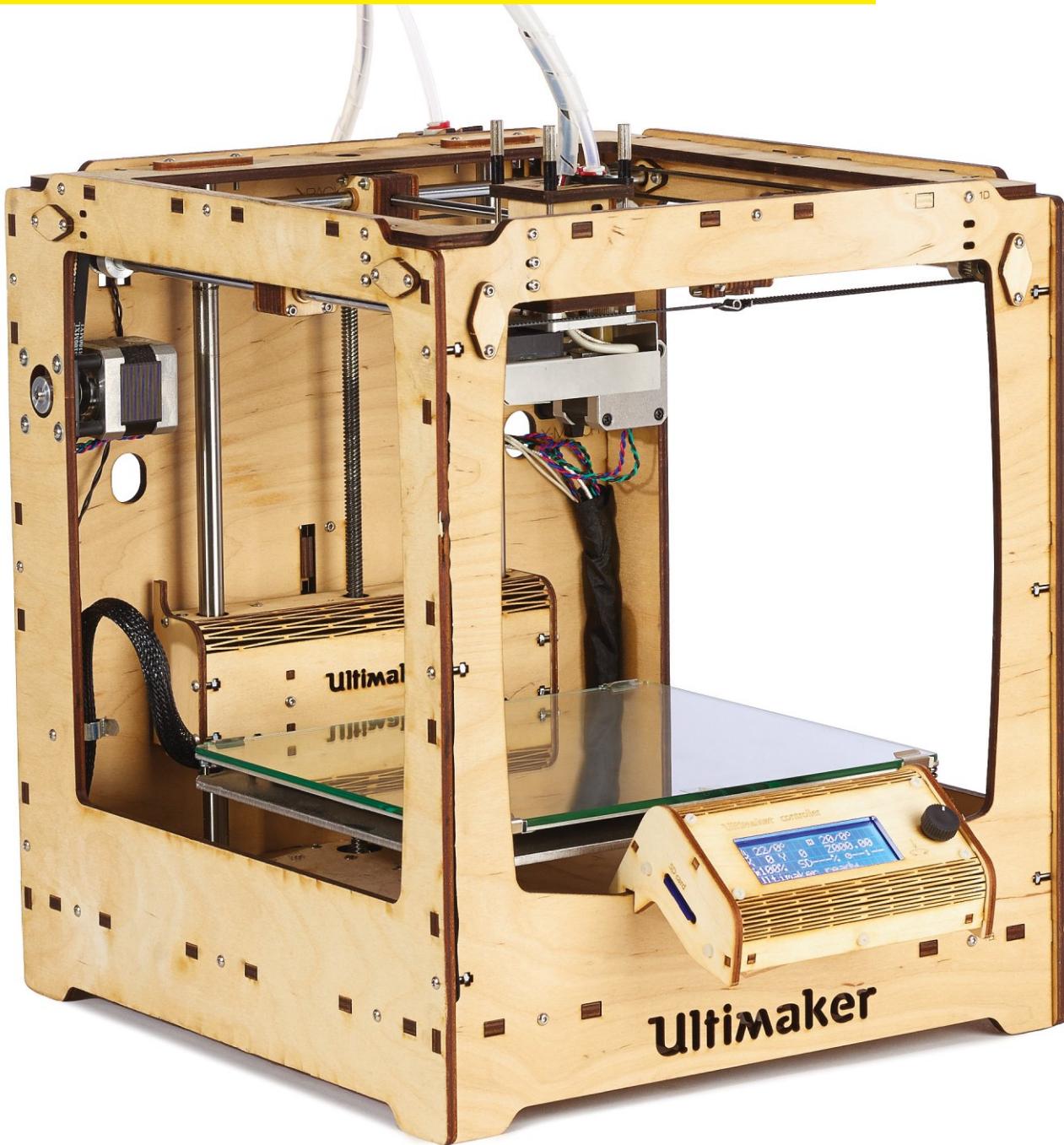


Kniterate is a compact digital **knitting machine** that brings fashion fabrication into your workshop. Perfect for small fashion businesses and design studios, **makerspaces** and schools.

With Kniterate, you can **create custom knitted products** like scarves, beanies, shoe uppers, sweaters, dresses, and more.

<https://www.kniterate.com/>

Machines



The **Fab Lab** network is full of stories about **prototype machines turned into succesful companies**. One of the most notable is the case of **Ultimaker**, a 3D printer born in **Fab Lab Utrecht** in the Netherlands.

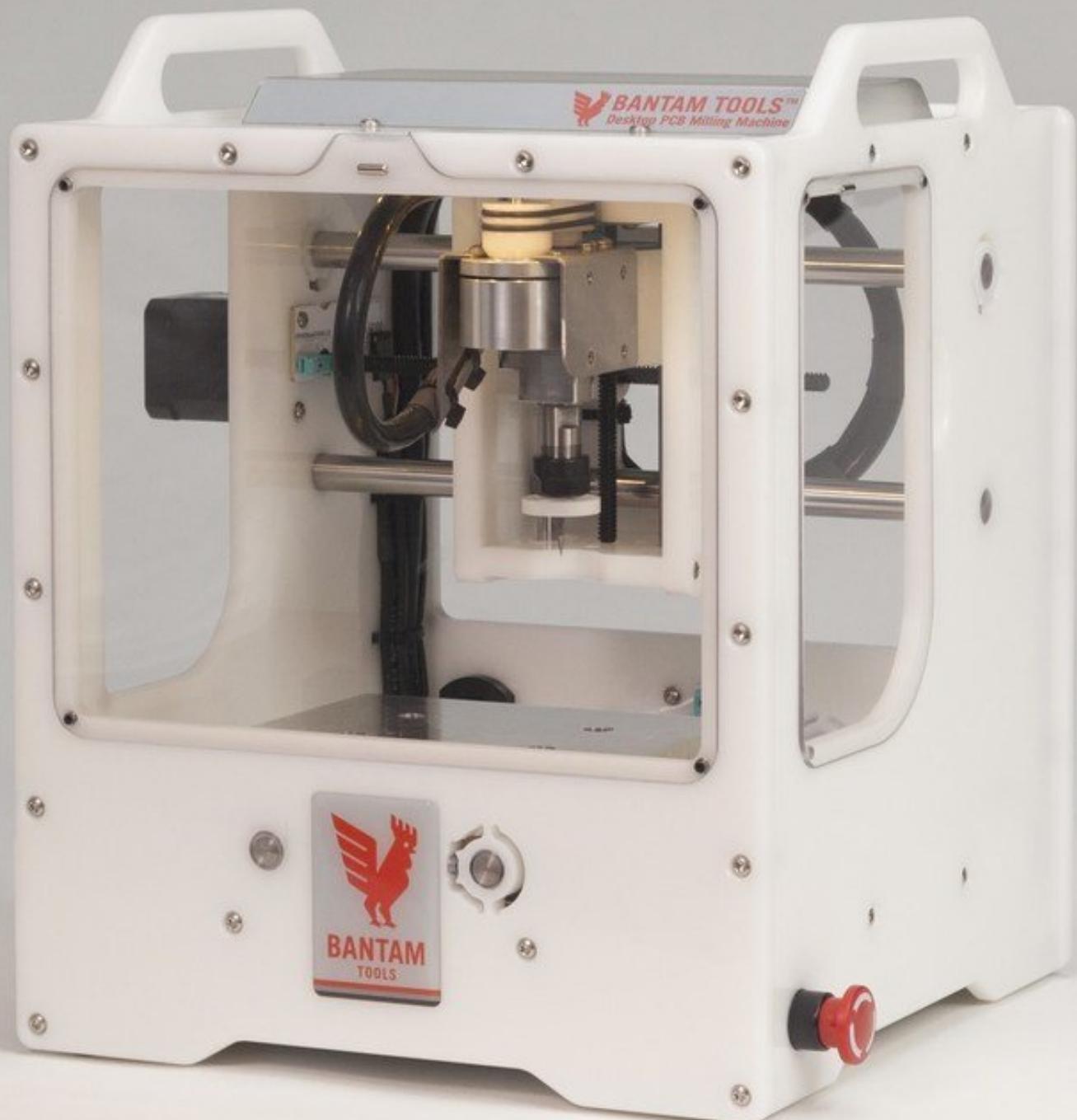
<https://ultimaker.com/>



Shaper is a human-involved robotics company focused on making precision cutting easy and accessible. They believe strongly in bringing the tool to the user, rather than expecting the user to conform to the tool. Mixed reality enables intuitive and efficient user interfaces.

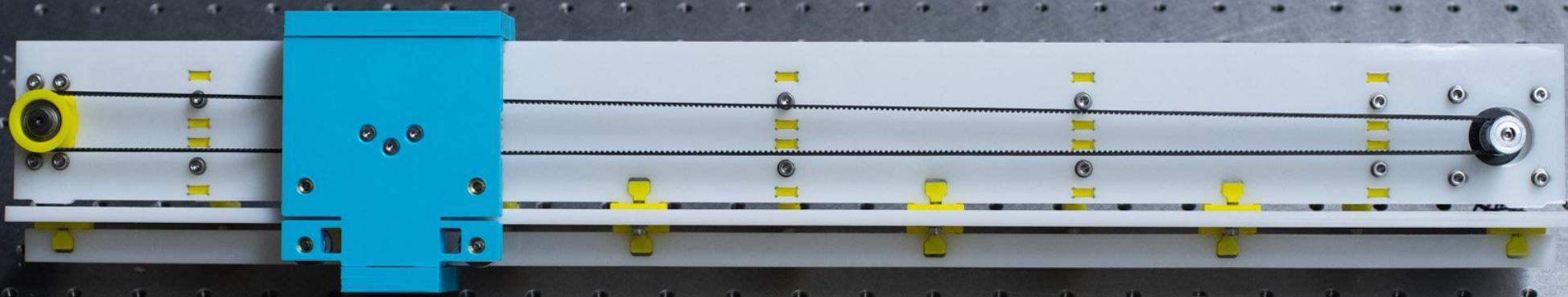
<https://www.shapertools.com>

Portable, computer controlled, 3-axis mill that is specifically **designed for use at home** or in a small workspace. The objective was to build a mill that is compact, clean, and quiet enough for use at home, yet is **precise enough for high level electrical and mechanical prototyping** work. The Othermill will be at home on your desk, in your workshop, or on your kitchen table. Based on the MTM Snap design, **developed** by Jonathan Ward at **MIT's Center for Bits and Atoms**.



<https://www.bantamtools.com/>

<http://mtm.cba.mit.edu/index.html>



The **Machine that Make** project at the MIT Center for Bits and Atoms is developing a growing collection of rapid-prototyping of rapid-prototyping machines that can be made and used in Fab Labs.

Furniture



LEKA is a restaurant that was born in Poblenou (Barcelona, Spain) in 1984, which continues to belong to the same family since then. The essence of Leka has always been sharing from generation to generation.

In the Leka 2.0 project, the first phase was to carry out a restaurant renovation with an Open Source concept, by sharing the furniture designs openly, through QR or through our website.

Designs made in collaboration with the Fab Lab Barcelona. After reopening Leka as open source, they began by working on the second phase of the project, **collecting data** on their way of working, km that products make, quantifying the waste generated, the transports that came to the restaurant. With these data, and with global thinking, they take action on their buying and selling policy, and with it they started the **Honest Food philosophy**, motivated by the future that the planet will leave for everyone else. They reduced 50% of transportation to their restaurant and 80% waste (plastics, cans and bottles).

An interesting example on how data and Fab Lab can help business development.



<https://restauranteleka.com/>



Opendedesk is an **online marketplace** that hosts independently designed furniture and **connects** its **customers** to local **makers** around the world. Rather than mass manufacturing and shipping worldwide, they're building a distributed and ethical supply chain through a global maker network.

<https://www.opendesk.cc/>

Computers



Andrew Bunnie, a PhD in electrical engineering from MIT, designed a new open-hardware computing platform, flexible and powerful, designed for use as a desktop, laptop, or standalone board. All the documentation for the PCBs is **open and free to download**, the entire OS is buildable from source, and it comes with a variety of features that facilitate rapid prototyping. This will be perhaps **the only laptop that ships with a screwdriver**. You'll be required to install the battery yourself, screw on the LCD bezel of your choice, and you'll get the speakers as a kit.

prosthetics

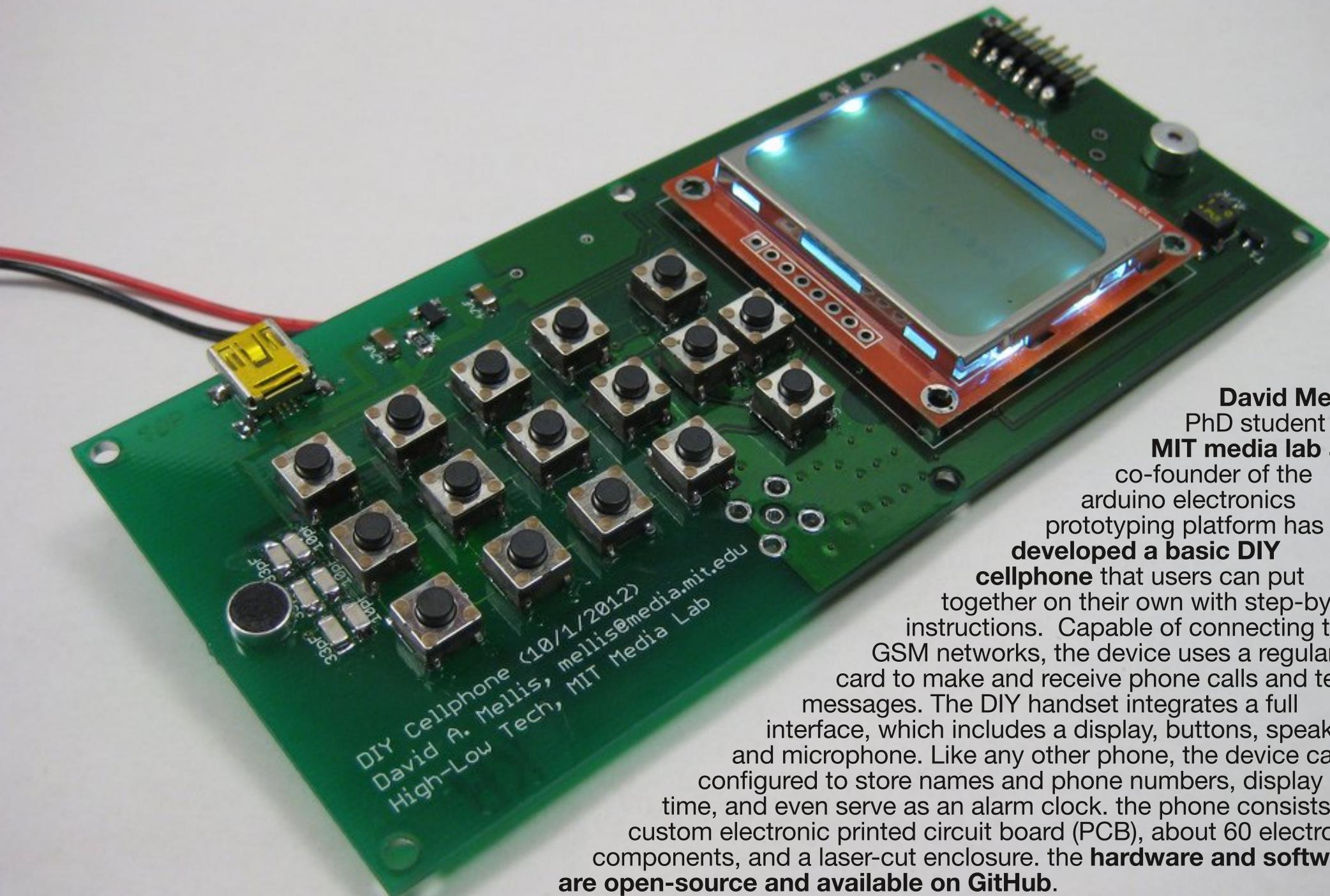


Christophe Debard had his leg amputated at 13, following a cancer diagnosis the year before. Always positive about his ability, Christophe **set out to show that prostheses should not be hidden but celebrated**. In May 2017, Christophe created his first **prototype for a 3D printed, customizable, light-up prosthetic leg**. Now, head of **Airbus Protospace Fab Lab**, an innovation lab for prototype development, he's helped many more pioneers bring their solutions to life through the Humanity Lab initiative.



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Phones



David Mellis, a PhD student at the **MIT media lab** and a co-founder of the arduino electronics prototyping platform has **developed a basic DIY cellphone** that users can put together on their own with step-by-step instructions. Capable of connecting to GSM networks, the device uses a regular SIM card to make and receive phone calls and text messages. The DIY handset integrates a full interface, which includes a display, buttons, speaker and microphone. Like any other phone, the device can be configured to store names and phone numbers, display the time, and even serve as an alarm clock. the phone consists of a custom electronic printed circuit board (PCB), about 60 electronic components, and a laser-cut enclosure. the **hardware and software are open-source and available on GitHub**.

Art

<https://www.haystack-mtn.org/fab-lab>

The **Haystack Mountain School of Crafts** is a Fab Lab and an international craft school located on the Atlantic Ocean in Deer Isle, Maine. Founded in 1950 as a research and studio program in the arts, Haystack offers one and two-week studio

workshops to participants of all skill levels as well as the two-week, **Open Studio Residency program**, exhibitions, tours, auctions, artist presentations, and shorter workshops for Maine residents and high school students.



Biomaterials

MATERIOM

Nature's recipe book.



For billions of years, terrestrial and marine habitats have thrived in producing vast quantities of materials, all without landfill or waste. It's time we took notes.

Materiom provides **open data on how to make materials** that nourish local economies and ecologies. We support companies, cities, and communities in creating and selecting materials sourced from locally abundant biomass that are part of a regenerative circular economy.

<https://materiom.org/>

TABBY EVO is an **open source platform for electric vehicles**. Free to use, available to everyone. It can be used to bootstrap businesses (electric vehicle startups), to create your own vehicle, for education purposes, and much more. By using it you can **save a lot of millions of dollars and years of R&D**.

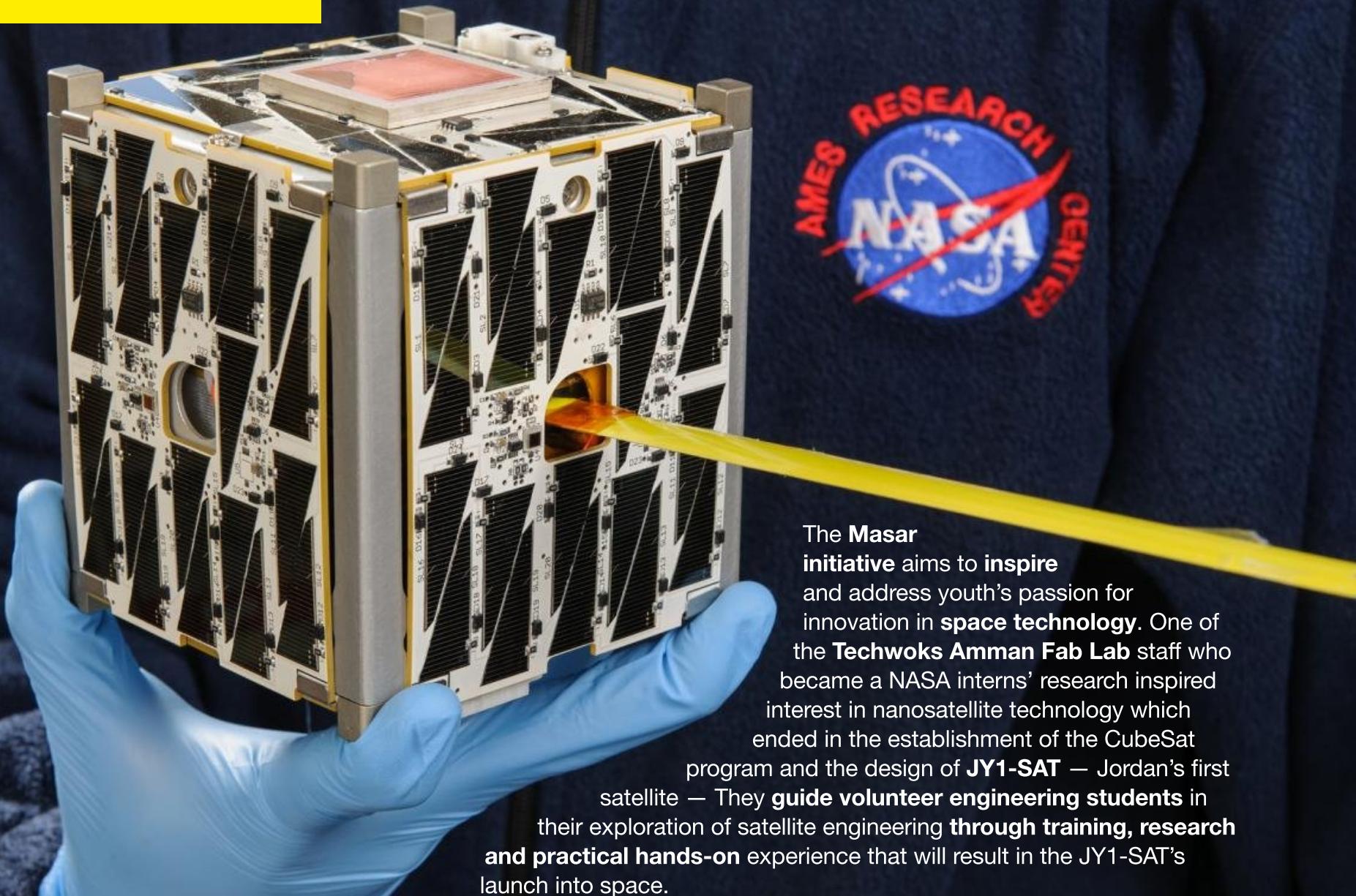
All the **plans and blueprints** can be **downloaded** in the website's download section. Everybody is welcome and **encouraged to improve the designs**, work on them, and upload them to **share** your ideas with the community.

Cars



<https://www.openmotors.co/tabbyevo/>

Space



The **Masar initiative** aims to **inspire** and address youth's passion for innovation in **space technology**. One of the **Techwoks Amman Fab Lab** staff who became a NASA interns' research inspired interest in nanosatellite technology which ended in the establishment of the CubeSat program and the design of **JY1-SAT** — Jordan's first satellite — They **guide volunteer engineering students** in their exploration of satellite engineering **through training, research and practical hands-on** experience that will result in the JY1-SAT's launch into space.

Toys

Magic Toys, fully made in **Fab Lab**

Amsterdam for children with learning and other associated disabilities, 4 to 7 years old. It is a duo of wooden playthings with a hidden magic behaviour. A pair of captivating, responsive companions that **empower exploration** through a series of hand gestures necessary to bring them to life.

<https://waag.org/en/article/future-toy-design>

https://www.scopesdf.org/scopesdf_lesson/emosilla-remake-3/



Emosilla has the goal to sensitize kids to emotions. It is based on cultural exchange between Latin America, where it started, and the rest of the world. Basic concepts of digital fabrication are introduced to students as they participate in the design of their own chair and fabricate it using the Milling machine and Laser cutter available at the Fab Lab. In the next step they assemble it and paint it according to their cultures.

MIT
Technology
Review

INNOVATORS UNDER 35



Victor Freundt embarked on a process of disseminating the tools he had learned at **Fab Lab UNI** at the National University of Engineering, and began to devise and launch new products and activities based on these design and manufacturing techniques. He was **named by MIT Technology Review as Best Innovator under 35** in Peru.

Face-Me is not only a website and an online store for **personalized toys**, it also represents a new way of empowering people. Through its activities and projects, it has become an **educational tool** with which children **learn by playing useful skills for the future**, skills that make them lose their fear of creating products and services of which the tomorrow all humanity can end up benefiting.

<http://face-me.pe/>

THE FAB CITY PROTOTYPE

Poblenou Neighbourhood, Barcelona

A Fab City is a new urban model for locally productive and globally connected self sufficient cities that shifts how cities source and use materials by bringing back production to distributed and smaller scales. More production occurs inside the city, neighbourhoods and citizens' homes, along with recycling materials and meeting local needs through local inventiveness. In Barcelona's Poblenou district, this model is being constructed through an evergrowing web of leaders, makerspaces and citizens.





ROMI
ROBOTICS FOR
MICROFARMS

ROMI is a four-year **Europe-funded research project** committed to **promote a sustainable**, local, and human-scale **agriculture**. It is developing an affordable, multipurpose platform adapted to support organic and polyculture market-garden farms.

The platform constitutes **robotic tools**, research, data and shared documentation and aims to **help farming communities increase their production** and improve their working conditions.

It is a great example of **cooperation** between **Fab Labs**, industry and policy makers.

Agriculture

<https://romi-project.eu/>



Communities

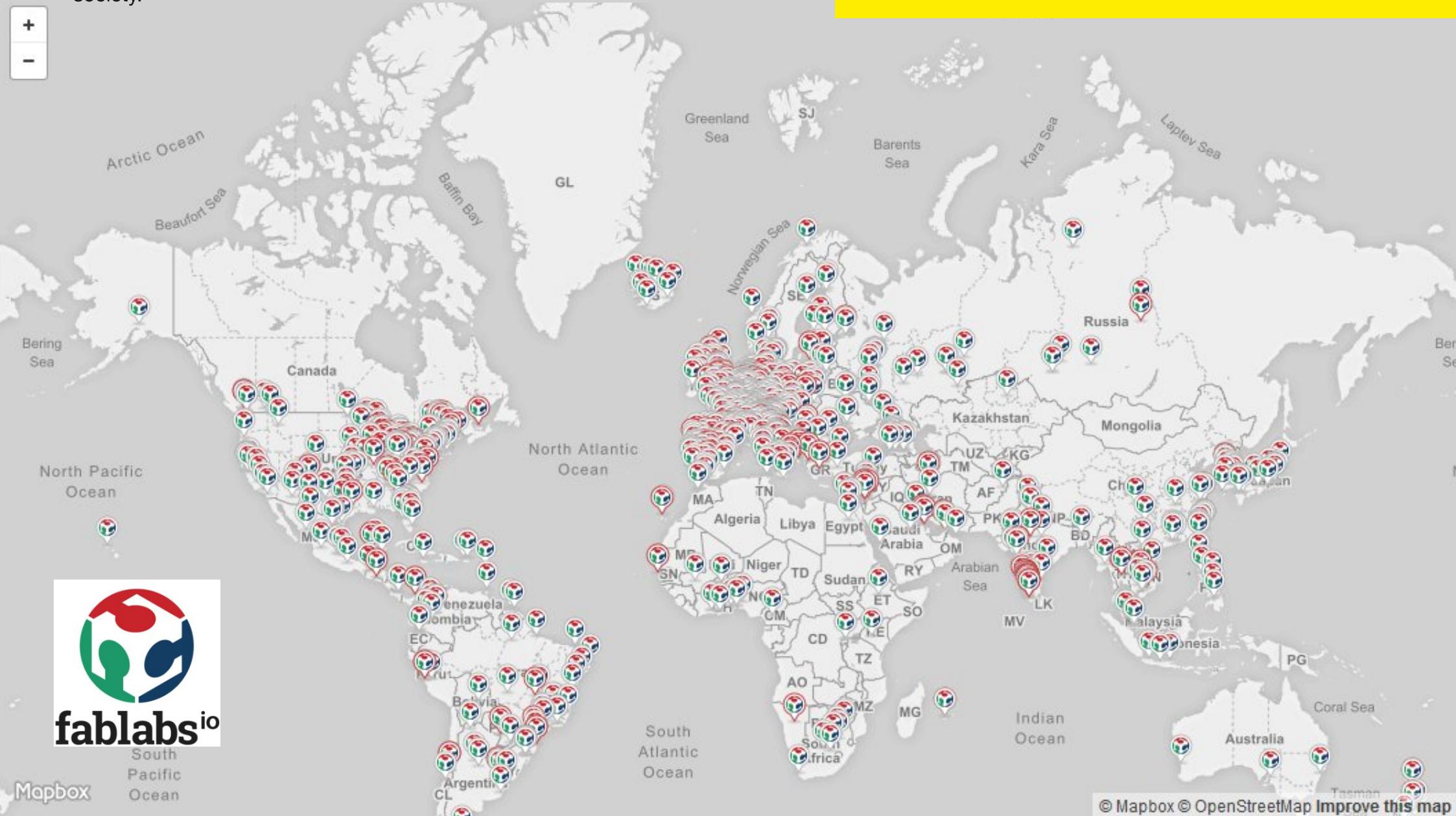
The **Floating Fab Lab** for the Amazon is an international project to establish a sustainable Fab Lab on a boat in the Amazon to **promote environmental & cultural conservation**. This project, initiated by Beno Juarez from Fab Lab Peru was **selected by the United Nations** for the Global Goals Solutions Summit for Sustainable Development in 2015.



<https://www.facebook.com/floatingfablab>

Fablabs.io is a collection of online resources for the international Fab Lab community and is the current **official list of Fab Labs** that share the same principles, tools, and philosophy around the future of technology and its role in society.

Platforms



<https://fablabs.io/>