Scuola universitaria professionale della Svizzera italiana
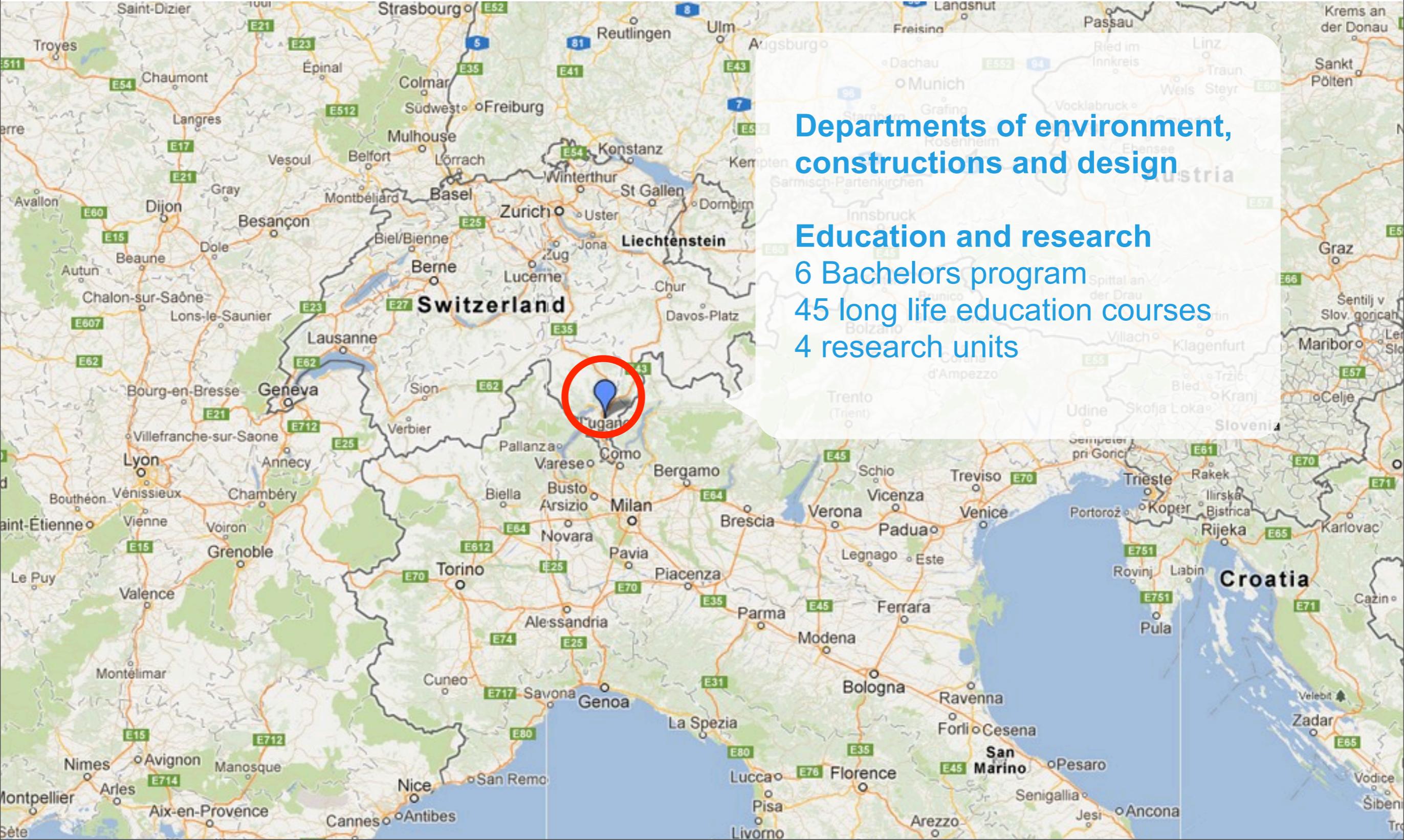Dipartimento ambiente costruzioni e design
Laboratorio cultura visiva

SUPSI

FabLabs for speeding up
interaction design education and research
The first six months of FabLab SUPSI Ticino (Switzerland)

Serena Cangiano

FAB8NZ 2012

SUPSI University of Applied Sciences and Arts of Southern Switzerland

Departments of environment, constructions and design

Education and research
6 Bachelors program
45 long life education courses
4 research units

A Master program in Interaction Design based on the approach of learning by doing

The Master of Advanced Studies in Interaction Design is structured in 4 modules;

The courses are design and practice-based. In each course students have to deliver as assignment a working prototypes of:

>interactive artifacts
>interactive environments
>interactive services

International workshops on the design of smart things through open source hardware

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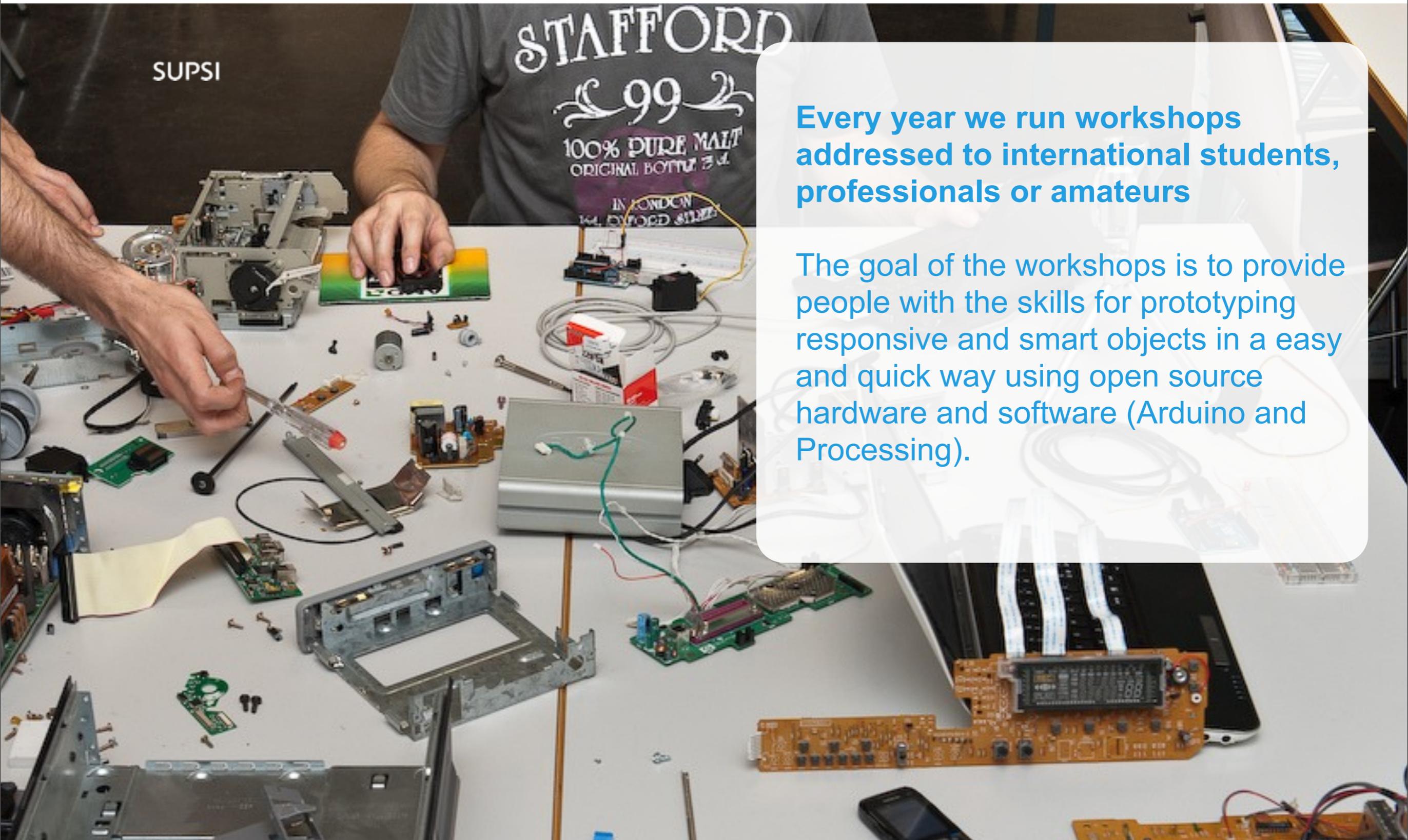
Every year we run workshops addressed to international students, professionals or amateurs

The goal of the workshops is to provide people with the skills for prototyping responsive and smart objects in a easy and quick way using open source hardware and software (Arduino and Processing).

A lab dedicated to the applied research in the field of Ambient Intelligence

We set up in 2010, the Interaction Design Lab, whose research activities are focused on the paradigm of Ambient intelligence that envisions networked devices that are:

> integrated into the environment
> context aware
> personalized
> adaptive

(Making Ambient Intelligence solutions is as complicated as defining it!)
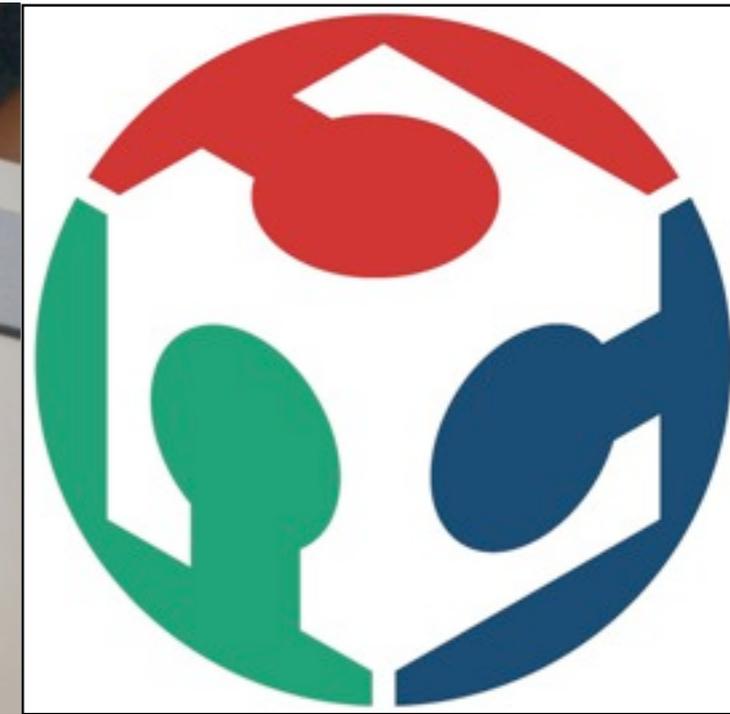
Challenge for the education and research activities:

completing the circle by including digital fabrication processes, the open design approach and fablabs principles

Hand-made interactive
prototype

Digitally fabricated
prototype

Open and shared
knowledge

February 2012
Setting up the FabLab SUPSI Ticino

The one-month process from the idea to the lab:

1) sending emails to the University directors

2) doing internal presentations

3) scraping money from the university budgets

4) asking support from the community (FabLab Torino and Arduino people)

5) Praying (during the shipment, we were not sure the laser cutter was on the boat from China to Switzerland)

6) Watching engineer Costantino Bongiorno sweating in front of the laser cutter (the manual was in Chinese)

From February 2012 to August 2012
6 months at a new speed

FabLab SUPSI Ticino is equipped with:

> a desktop 3D printer, uDimension

> a laser cutter, 60cm x 90cm

> electronic components, sensors and Arduino boards

New skills

Collaborators, researchers and students learned how to manage digital fabrication processes
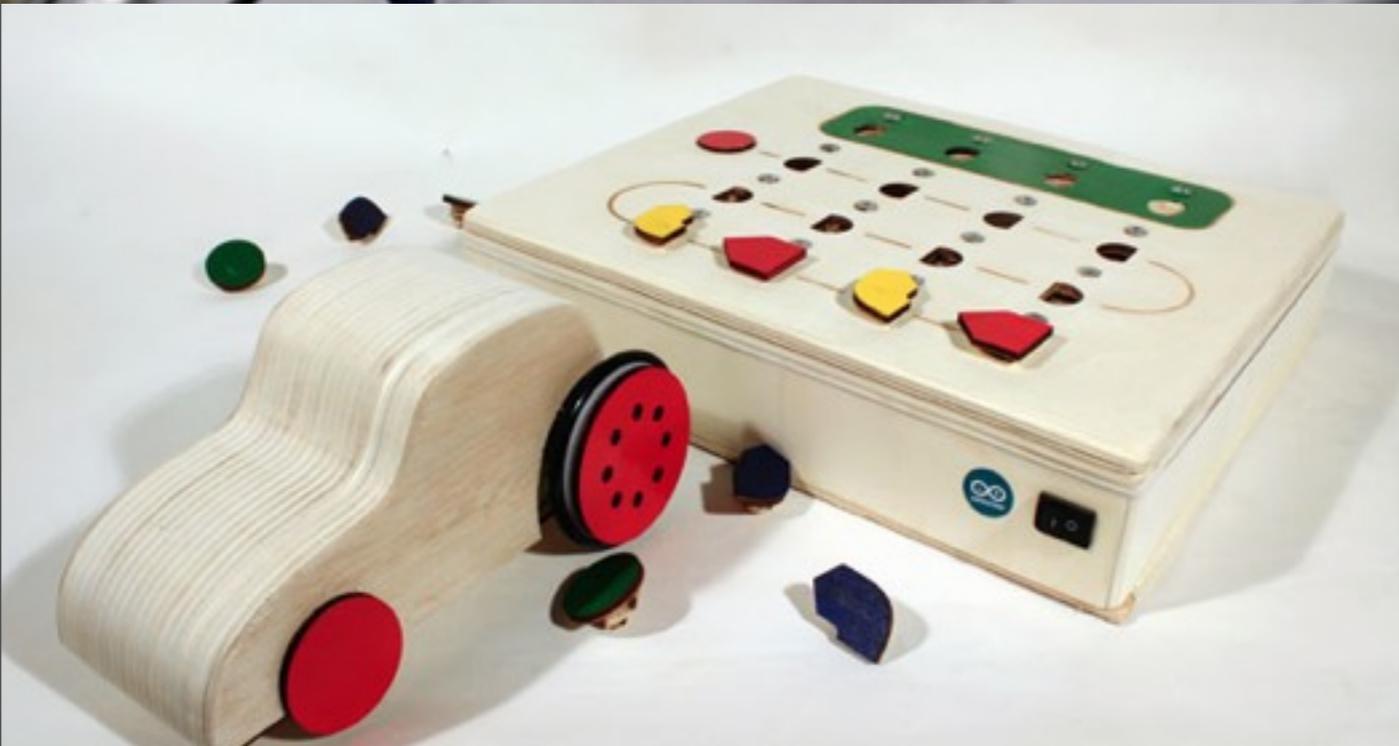
New projects

Master students developed new solutions of interactive artifacts, environments and services (www.maind.supsi.ch/portfolio)

A safety modular system featuring a beehive shape for embedding customised behaviours and sensors connected to internet
*by Alberto Tacconi*

A toy for teaching kids the basics of programing
by Matteo Loglio

New projects

Master students developed easily new solutions of interactive artifacts, environments and services (www.maind.supsi.ch/portfolio)

A service kit for smokers featuring an sensing lighter monitoring the daily consumption of cigarettes
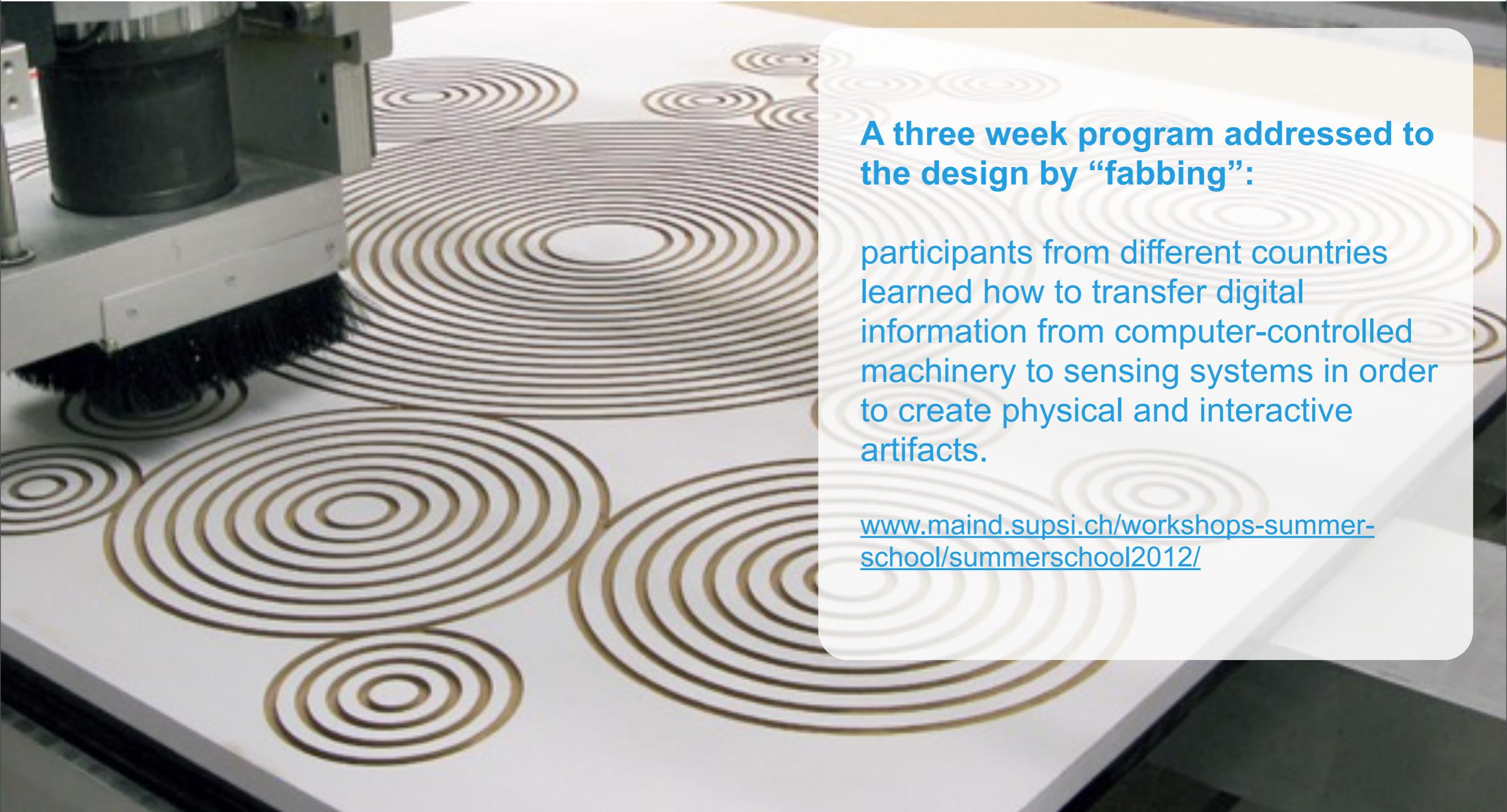by Ozge Genc, Consuelo Keller, Matteo Loglio, Mark Pruneri, Alberto Tacconi, Carlos Velasquez
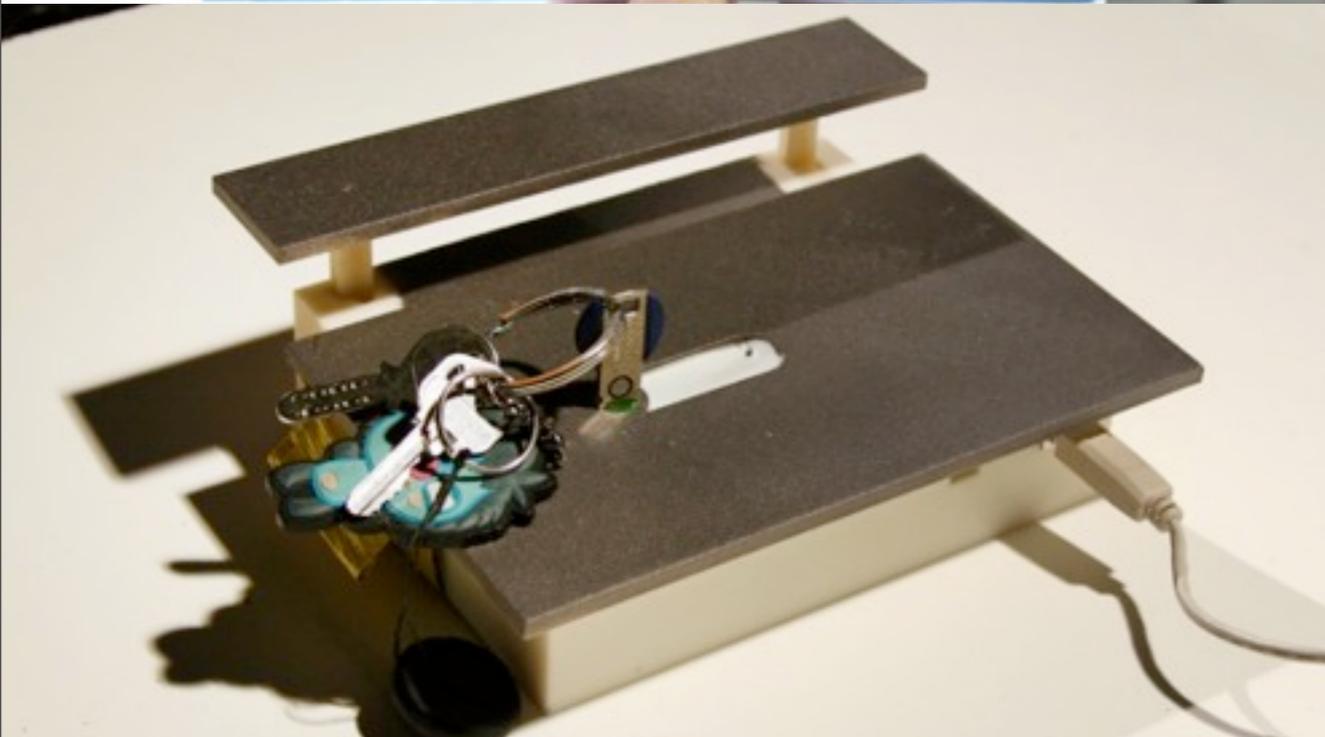
A smart door lock setting the lighting system of the house according to the mood of the households
by Carlos Velasquez

New courses

The summer school in digital fabrication and interaction design

in collaboration with Arduino.cc, Vectorealism.com, Openwear.org

A three week program addressed to the design by "fabbing":

participants from different countries learned how to transfer digital information from computer-controlled machinery to sensing systems in order to create physical and interactive artifacts.
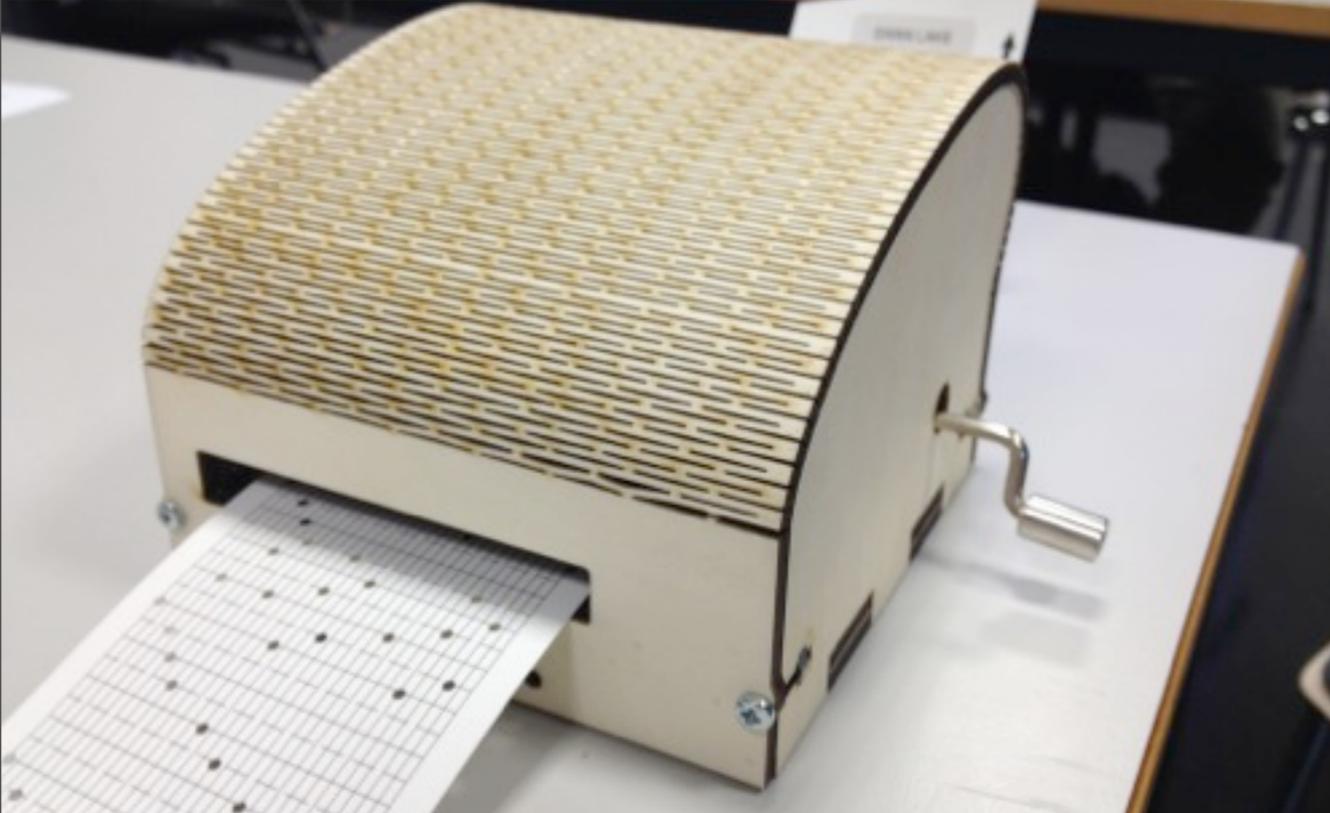
www.maind.supsi.ch/workshops-summer-school/summerschool2012/

Digital fabrication workshop for beginners
Some results
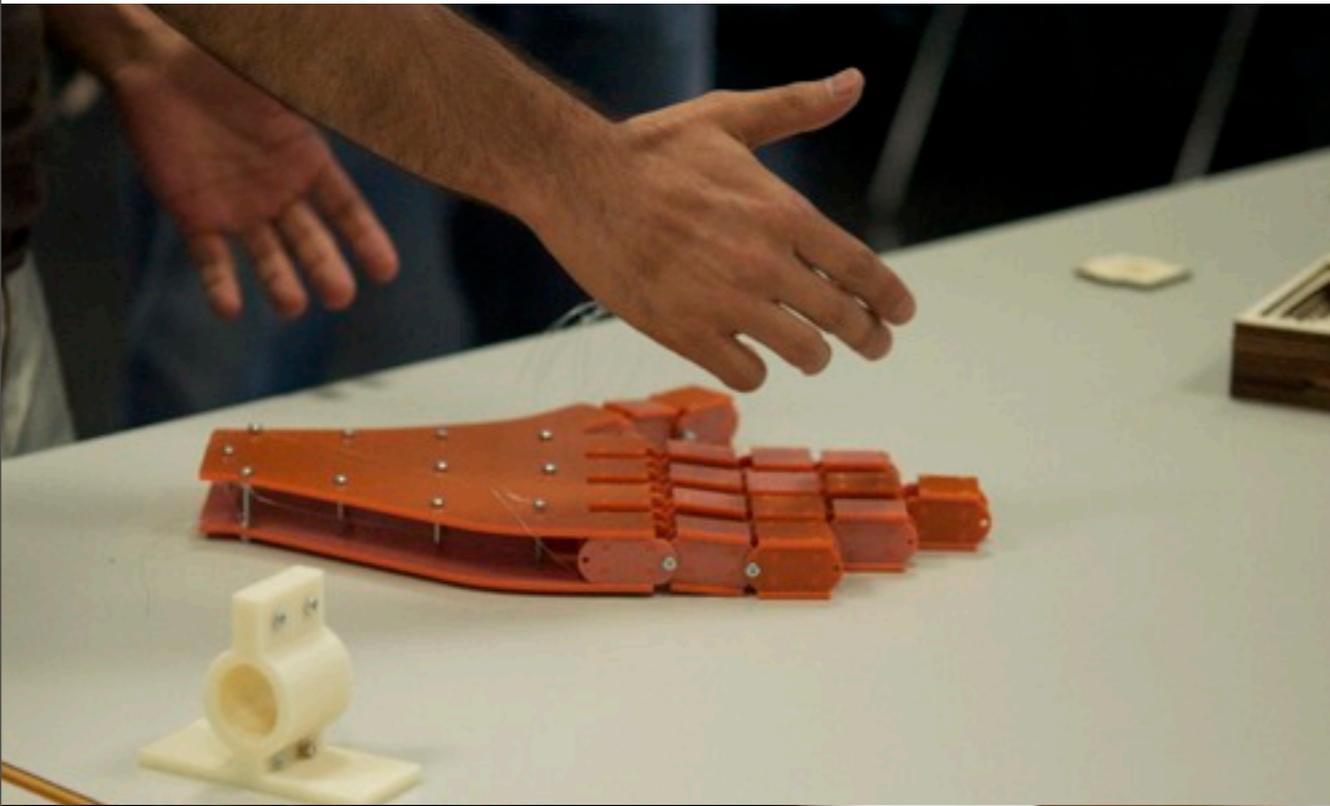
A mechanical hand made by laser-cut plexiglass modules
by Adam Madira (India)

A sound box made by laser-cut plywood
by Barbara Bartos (USA)

Physical and wearable computing workshop
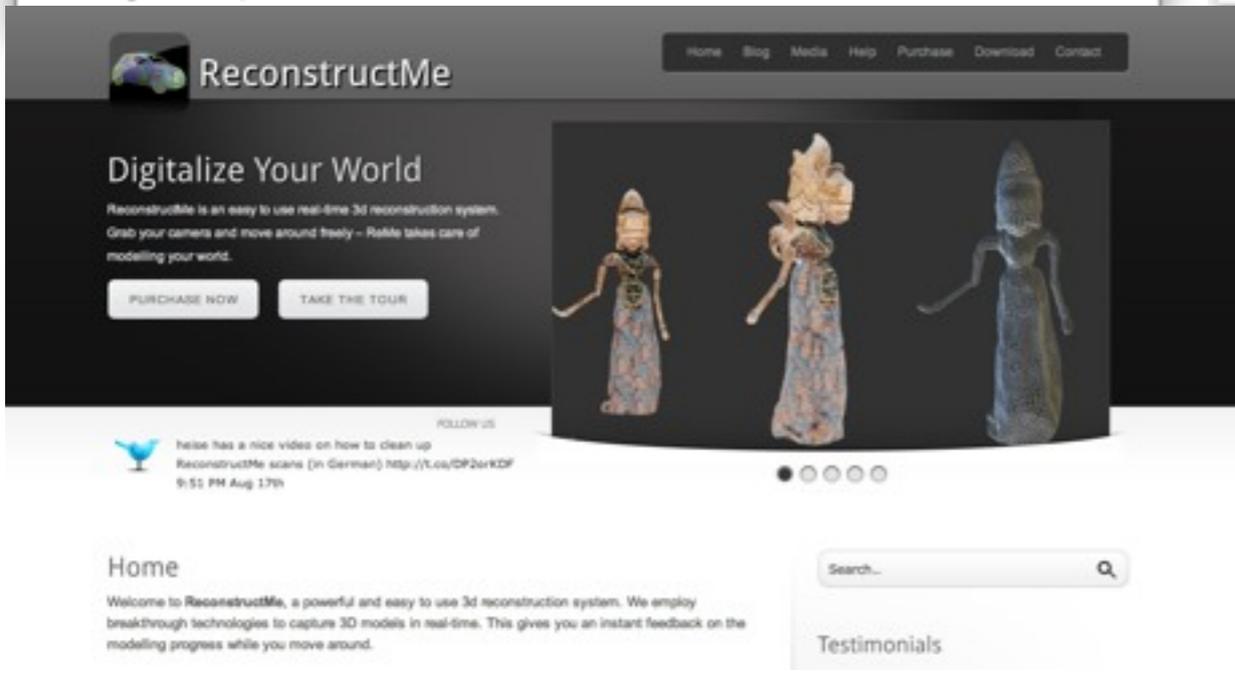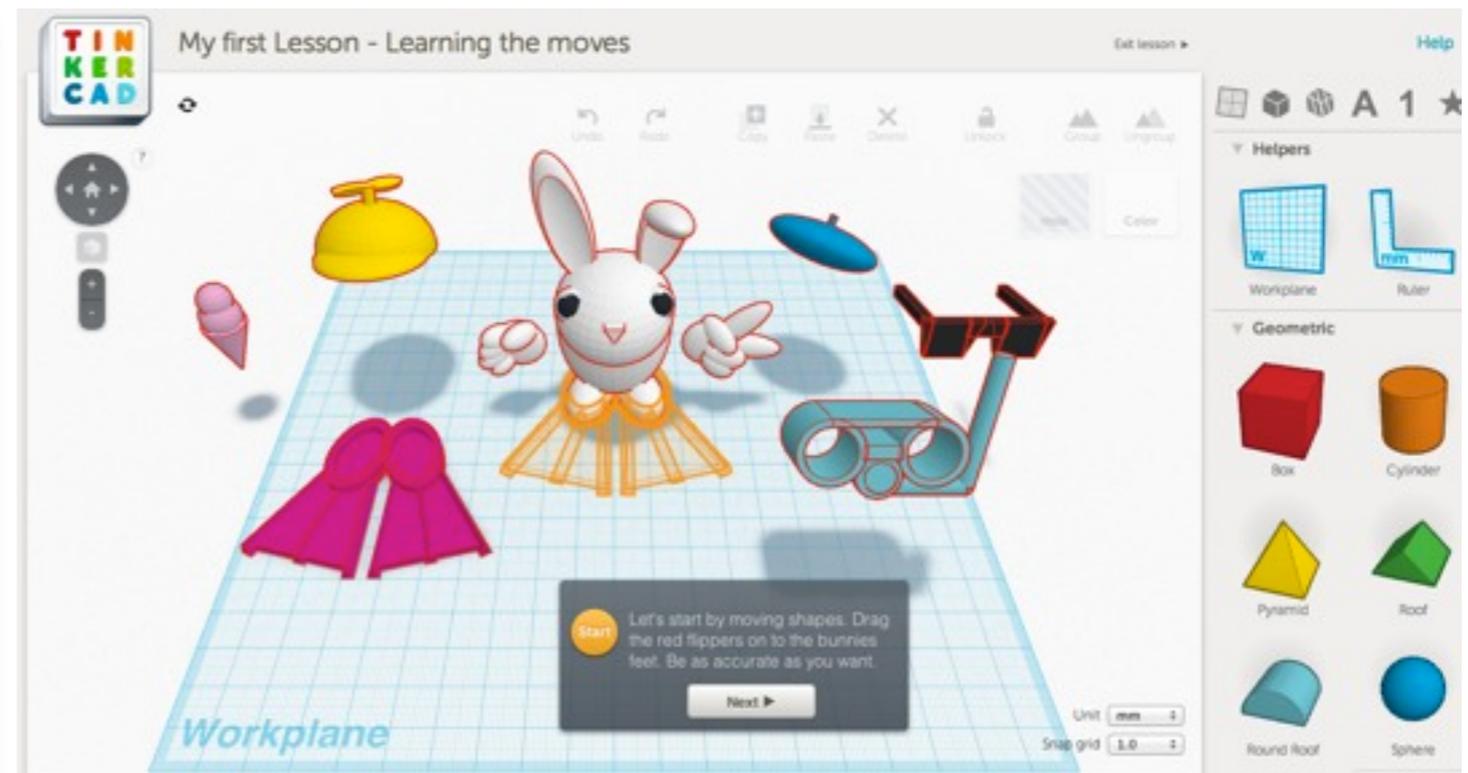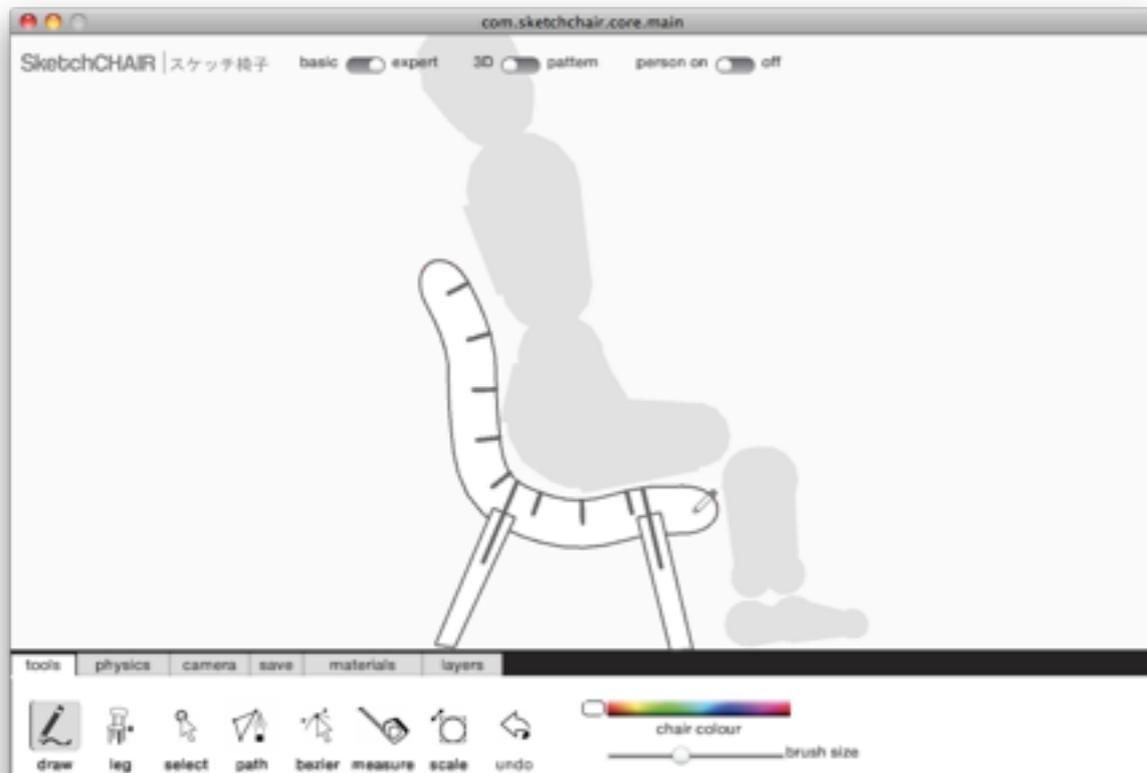## Arduino + open fashion

The Balanceshirt made by laser cut acrylic felt, tilt sensors and lilypad to assist people with balance problems
by @tamberg

A smart slipper made by laser cut acrylic felt providing feedback if the user steps incorrectly
by @troykyo

New researches

A study on the customization of interactive artifacts that can be digitally fabricated

Upcoming activities

Opening the FabLab to the public, starting up new collaborations and bolstering the community because...

...FabLabs are spaces empowered by people!

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THANK YOU!

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