

FAB ACADEMY

10th
Edition

2019

ANNUAL REPORT

 **FABACADEMY** By  **fabfoundation** Part of the  **Academany**
The Academy of (almost) Anything

www.fabacademy.org - www.fabfoundation.org - www.fablabs.io



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FAB ACADEMY

DISTRIBUTED EDUCATION

In today's education systems, two styles of education are broadly used: in-person, on-campus learning (school and University courses), and distance learning with remote students (MOOCs-Massive Open Online Courses). Fab Academy uses a hybrid model, balancing in-lab and online synchronous and asynchronous learning, that is, globally distributed education where the campus comes to the student, rather than the student going to campus.

At Fab Academy, students are not isolated, rather gathered in local workgroups with peers, mentors, and machines. Everyone is then connected globally in an online campus with content sharing and interactive video classes. The individual labs become Nodes (local hubs) for local participants, which are also supported and supervised regionally by mentors. Knowledge in this course is constructed "just in time", the result of multiple interactions at different content levels with different disciplines, supported by global and local mentoring interactions.

ACADEMANY EDUCATIONAL PLATFORM

Academy is a globally distributed campus for high level technical education, with hundreds of locations all over the world, supported by the Fab Lab Network.

The distributed educational model developed in Fab Academy has been adapted to several global courses (collectively called Academy) that share the same model and values. The other courses, which incorporate textiles, biomaterials, biology and more, all share the hands-on instructional approach in which students are assigned to workgroups with local mentors, and linked by shared content and interactive lectures by global leaders.

WHAT IS THE FAB ACADEMY PROGRAM?

[Fab Academy](#) is a fast paced, hands-on learning experience where students learn how to envision, prototype and document their ideas through multiple hours of practical experience with digital fabrication tools. The Fab Academy program, part of the Academy Educational Platform, introduces participants to the principles, applications and implications of digital fabrication. The motto of the course, from the original MIT course that inspired Fab Academy, is How to Make (almost) Anything. We use digital fabrication tools to design, exchange and fabricate projects.

The program runs from January to June every year. During this time, students plan and execute a new project and skill every week, culminating with a final project the student must complete and present in order to receive their Diploma. The final project integrates all of the learned skills and knowledge. This project is globally evaluated, and offers the potential to prototype future entrepreneurship opportunities.

Through tracking students' successes, we have discovered that there is a strong demand in the workforce today for the skills gained through Fab Academy: digital fabrication skills, problem solving skills, ingenuity, collaboration, and more.

YOU CAN FIND OUT MORE ABOUT THE COURSE HERE

www.fabacademy.org

FAB ACADEMY IN NUMBERS

Following the 2008 pilot, the Fab Academy officially accepted the first group of students in the Fall of 2009. Since then, and for more than 10 years, hundreds of students have passed through the global Fab Academy campus.



1,635 Students enrolled



965 Students graduated



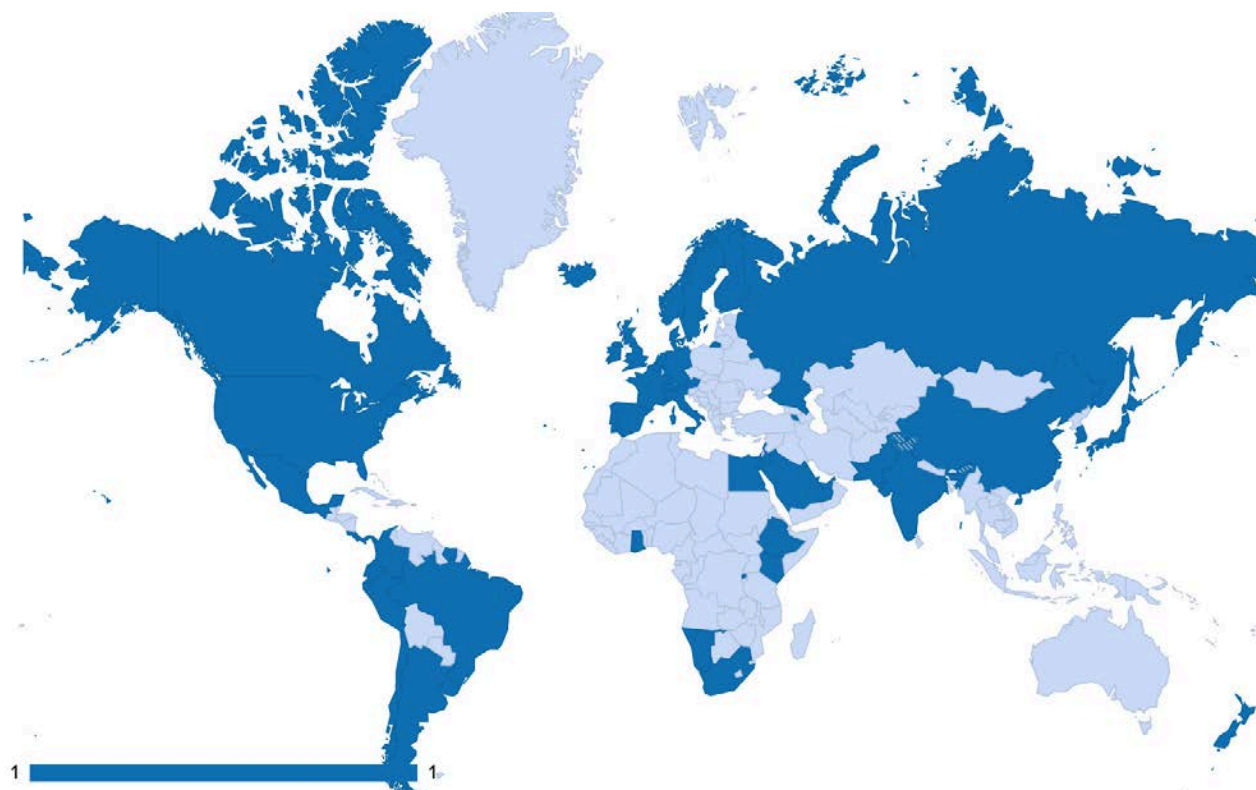
211 Nodes have offered the program



54 Countries where Fab Academy has been hosted

This growth has in parallel with the exponential growth of the Fab Lab Network, which now numbers more than 2000 Fab Labs around the globe!

Fab Academy has expanded geographically as well. From 2009 until 2019, the following countries have offered the Fab Academy program:



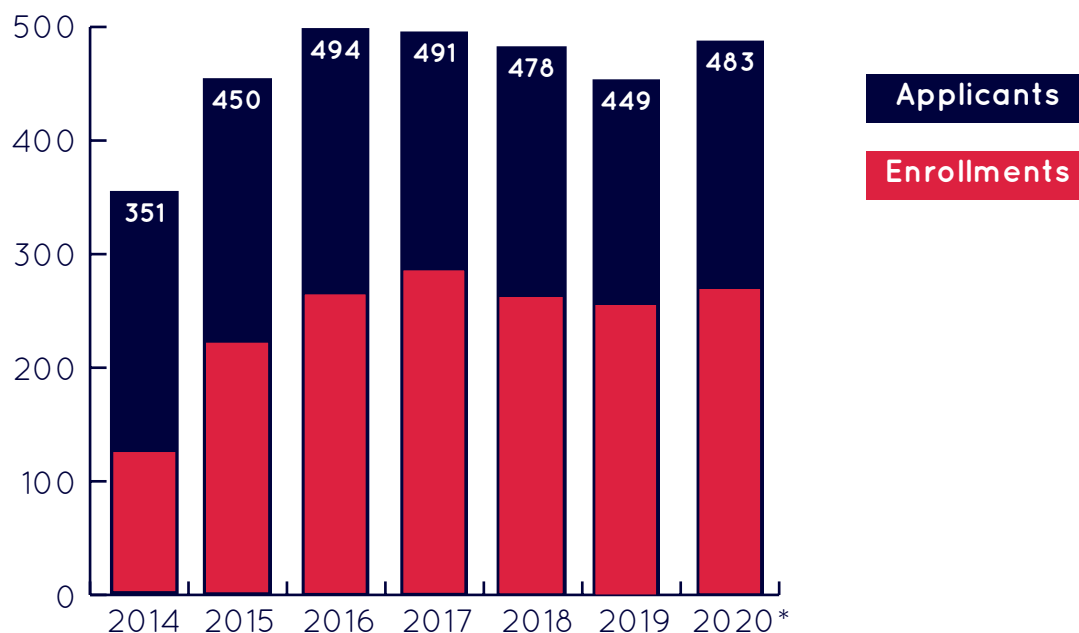
In dark blue, Countries with Fab Labs where FA has been taught (since 2009)

Argentina-Armenia-Austria	A	IQ	Qatar
Bahrain-Belgium-Brazil	B	IR	Russia-Rwanda
Canada-Chile-China-	C	IS	Saudi Arabia-Singapore-South
Colombia-Costa Rica			Africa-South Korea-Spain-
Denmark	D		Suriname-Sweden-Switzerland
Ecuador-Egypt-Ethiopia	E	IU	United Arab Emirates-United
Finland-France	F		Kingdom-Uruguay-USA.
Germany-Ghana	G		
Iceland-India-Ireland-Israel-	I		
Italy	J		
Japan-Jordan	K		
Kenya-Korea-Kuwait	L		
Lebanon	M		
Mexico	N		
Namibia-Netherlands-New	P		
Zealand-Norway			
Pakistan-Panama-Peru-Portugal			

In the 2019 course cycle, 3 countries offered the Fab Academy program for the first time: Armenia, Qatar and Suriname.

Student enrollment has grown as well. The following graphic shows the growth in the number of applications and enrollments since 2014.

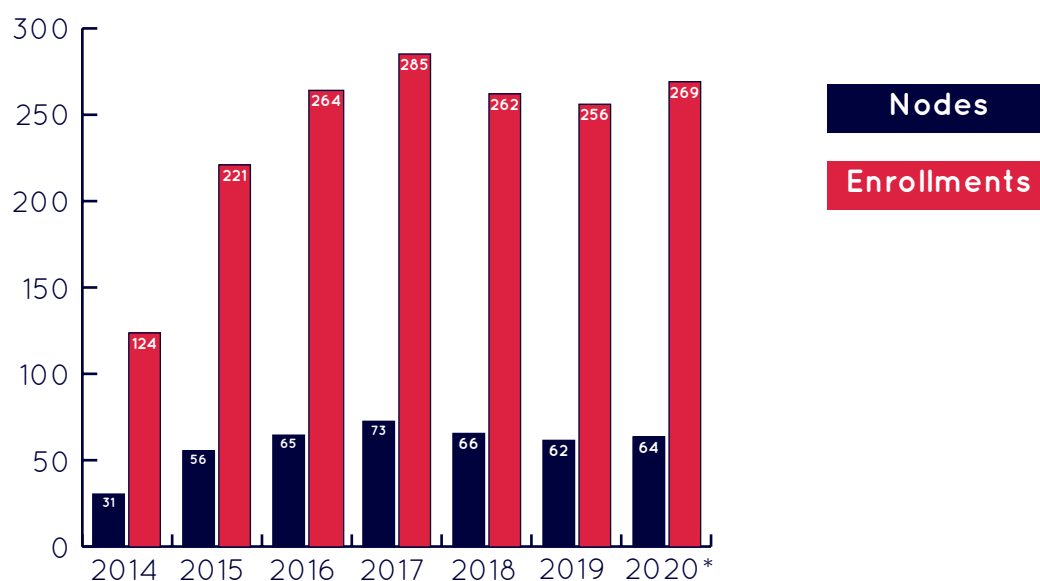
Applications and Enrollments



Number of FA applicants and actual enrollments per year since 2014
*2020 numbers are preliminary (02/18/2020)

The following graphic shows the growth in the number of Enrollments and Active Nodes since 2014.

Enrollments and Nodes



Number of FA applicants and actual enrollments per year since 2014 - *2020 numbers are preliminary (02/18/2020)

As a general trend, the gross number of students in Fab Academy has been stable for the last 3 years.

FAB LABS

WHAT IS A FAB LAB?

Fab Labs began as an outreach project from MIT's [Center for Bits and Atoms \(CBA\)](#), and subsequently reached people around the world. The Fab Academy course was launched to provide access to advanced instruction for students who were exceeding the educational resources locally available to them. Fab Labs became the platform in which this access spread throughout the global Network.



Fab Academy Nodes

Fab Academy Nodes (local hubs) are Fab Labs that fulfill all of the requirements to offer Fab Academy, including:

► **Qualified staff:** Fab Labs need trained staff in order to offer Fab Academy. In order to instruct Fab Academy, you need to have taken the Fab Academy program and gained the necessary experience and knowledge. Through this, the program offers job opportunities and a strong sense of community.

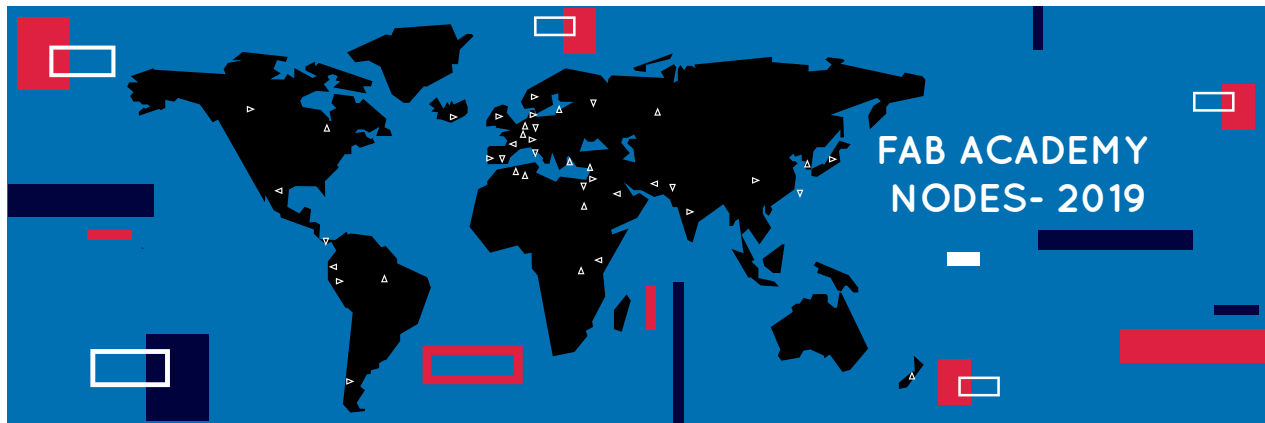
► **Machines, Supplies and Physical Infrastructure:** Fab Labs must ensure access to all the equipment (capabilities) and materials listed in the [Fab Inventory](#), a common space for students to take class and work, and internet connectivity for the global sessions.

Evolution of Nodes

There has been a growth in the number of Nodes over the last several years, expanding from 12 Fab Labs in 2010 to 70 in 2017.

Numbers since 2017 have stabilized to an average of 65 Active Nodes every year.

In the 2019 course cycle, the Fab Academy registered 62 active Fab Labs.

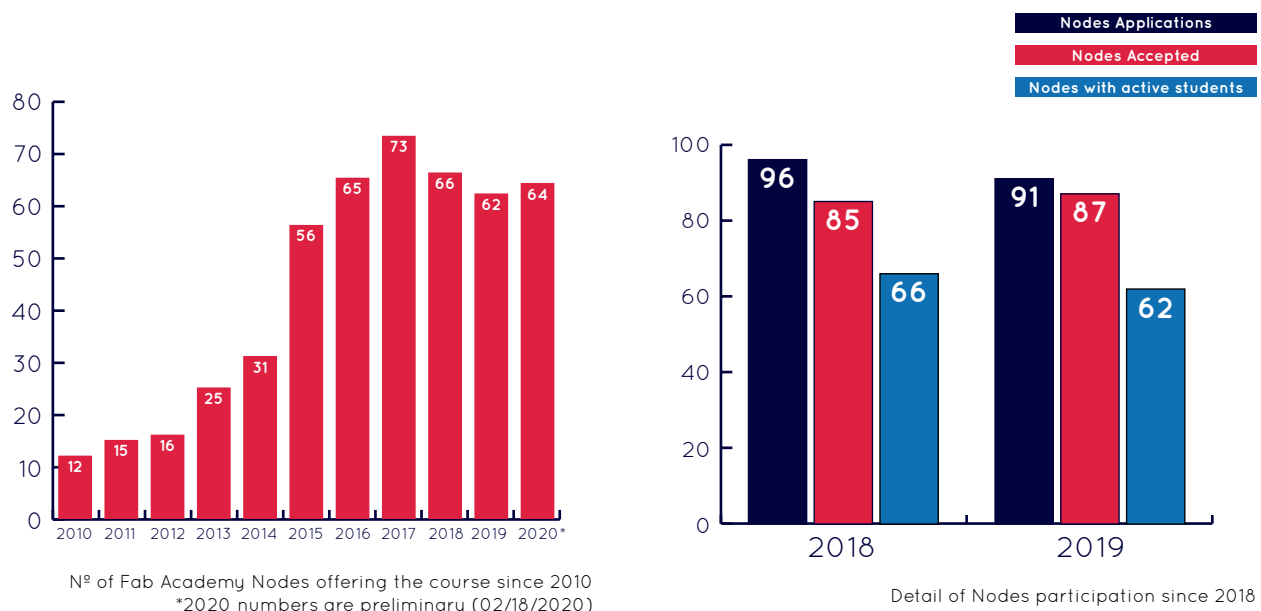


Distribution of Nodes

The first edition of Fab Academy took place in 2008 when 8 students in MIT's MAS863 class remotely with Prof. Neil Gershenfeld. At the time, the remote Nodes taking the class were in Barcelona, Amsterdam, and Norway.

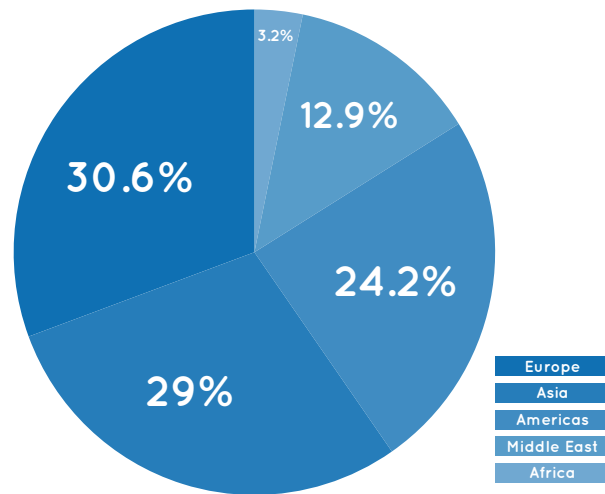
In the first years of the program (2009/10), Fab Academy was mostly offered by European, Latin & North American Fab Labs. This has since increased to a considerable presence of Fab Academy in multiple countries across the world. During this past cycle, for example, there was a significant rise in the number of Middle Eastern Fab Academy nodes.

Nodes per Year



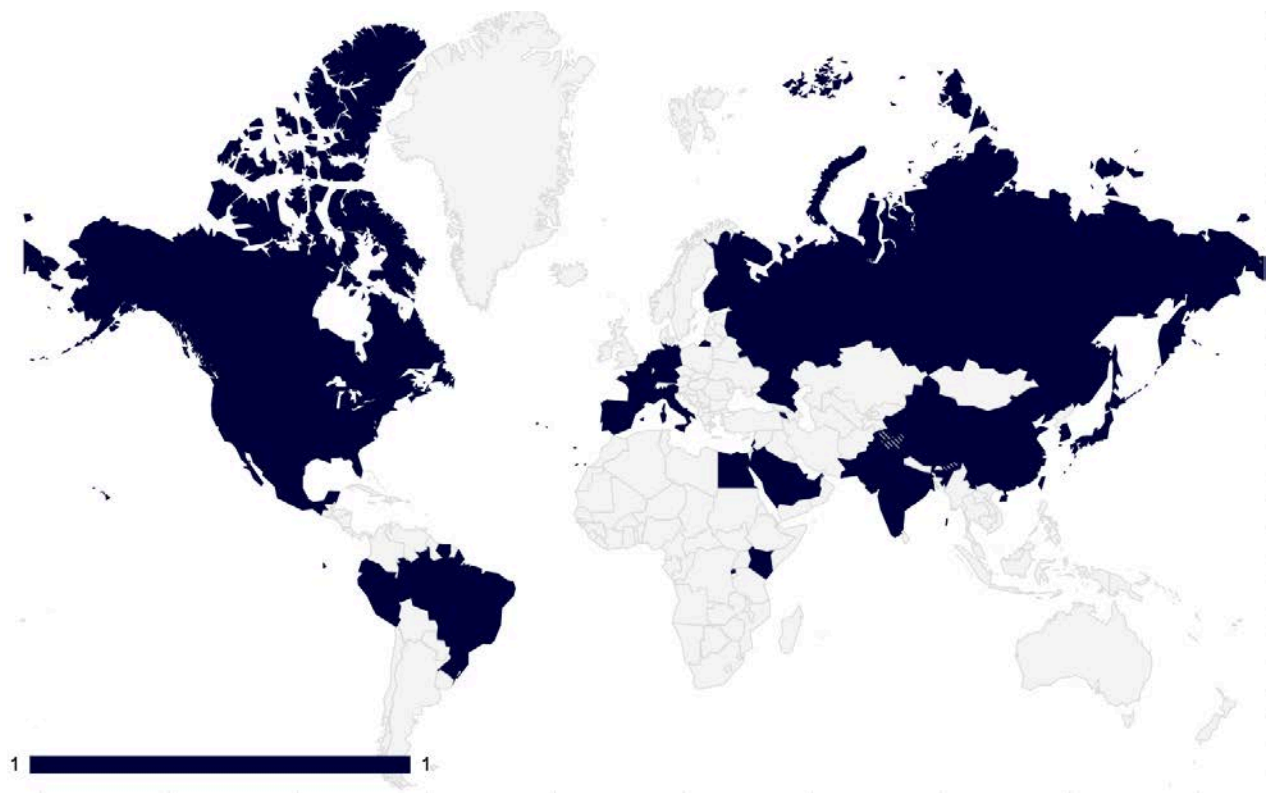
In 2019, Fab Academy had 62 Nodes, most of them located in Europe, followed by Asia and South America:

19 in Europe
18 in Asia
15 in the Americas
8 in the Middle East
2 in Africa



In 2019, 3 countries offered the Fab Academy program for the first time: Armenia, Qatar and Suriname.

The following map shows the geographic distribution of the Fab Labs that offered Fab Academy in 2019.



Distribution of Nodes that offered FA in 2019

Node Number of Students

In 2019, the average number of students per Fab Academy Node was 4 students.

In 2019, Fab Lab Oulu (Finland) was the largest Node with 10 students, followed by Fab Lab Tecsup (Peru) with 9 students, and Fab Lab Barcelona (Spain), Vigyan Ashram (India), and QBIC (Qatar) each with 8 students.

STUDENTS

The Fab Academy course technically trains students for participation and leadership in a global economy and workforce, introducing them to the Fab Lab Network and global community.

Our Fab Academy graduates come from highly diverse professional backgrounds. Students are high school, bachelor, master and PhD students, as well as professionals who are expanding their careers: architects, industrial, product designer, fashion and graphic designers, artists and artisans, multiple engineering pathways (industrial, civil, mechanical, electronics, telecommunication and computer), biologists and chemists.

STUDENTS ENROLLED AND GRADUATED

Upon completion of the 20 certificates comprising the course, students are awarded

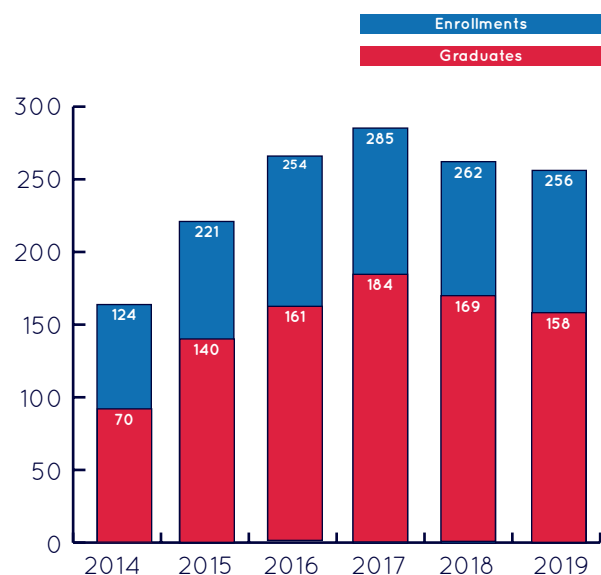
with the Fab Academy Diploma, presented at their graduation ceremony during the Annual International Digital Fabrication Conference (FABX).

In 2019, Fab Academy received



449 applications, out of which **256** students enrolled in the Fab Academy program. 31 of these students were continuing students who were completing in prior Fab Academy cycles.

In 2019, out of the **256** students enrolled in Fab Academy, **158** graduated from the program.

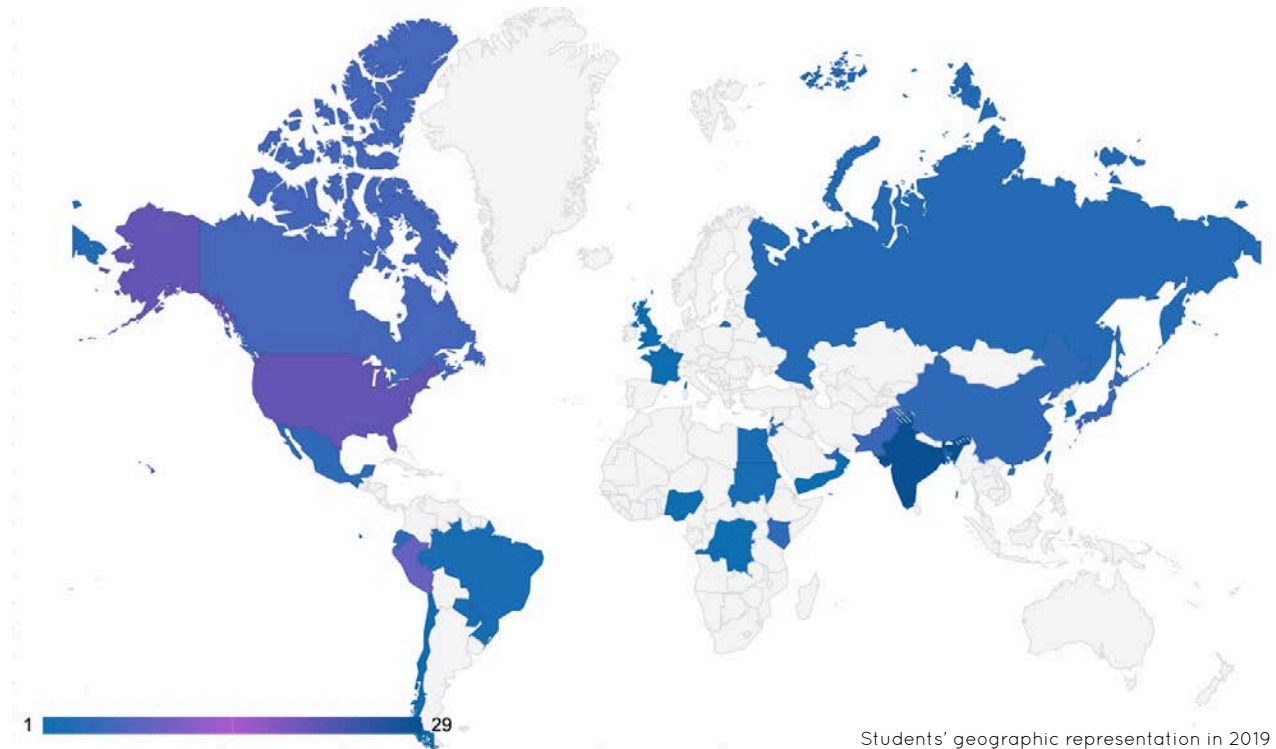


Number of Students enrolled and graduated per year

GEOGRAPHIC STATISTICS

When analyzing the geographic representation of the students that joined Fab Academy in 2019, students from India made up the majority of the cohort with 29 students, similar to previous years.

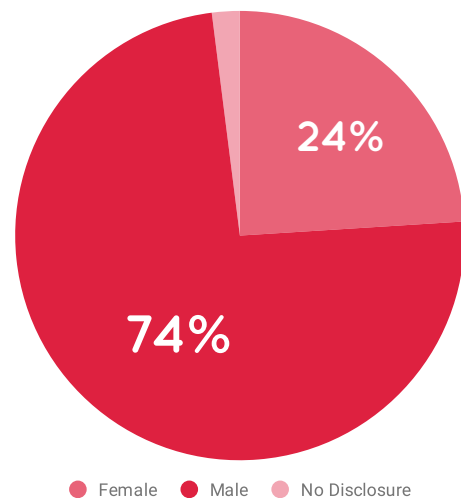
The second largest cohort of students came from the United States (21 students); followed by Peru (9 students) and Canada (6 students).



STUDENT PROFILE

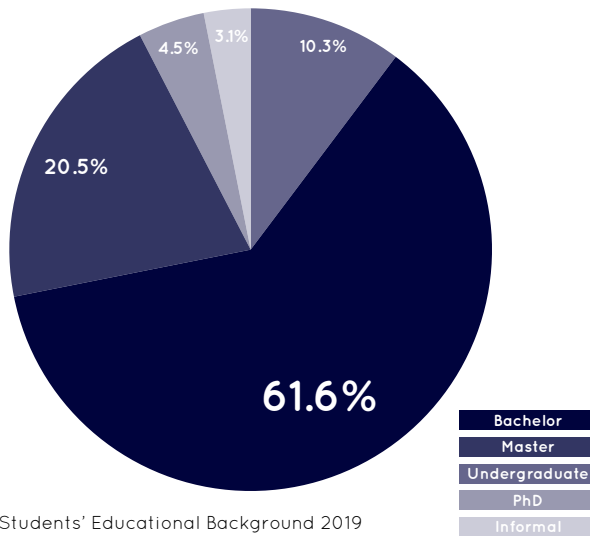
The average **age** of the students enrolled in Fab Academy in 2019 was **30** years old, younger than the average age in 2018 (40 years old).

Analyzing the **gender** distribution of students in 2019, as in the last years of the program, 24% of Fab Academy applicants were women, 74% were males, and 2% preferred not to disclose their gender affiliation.

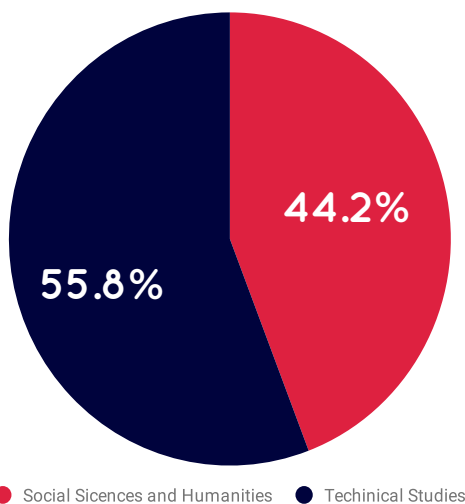


EDUCATIONAL BACKGROUND

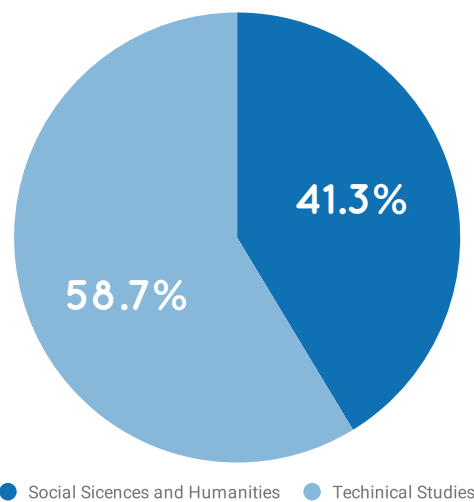
61.6% of Fab Academy Students hold a Bachelor's degree and 10% are Undergraduates in the process of obtaining a Bachelor's Degree.

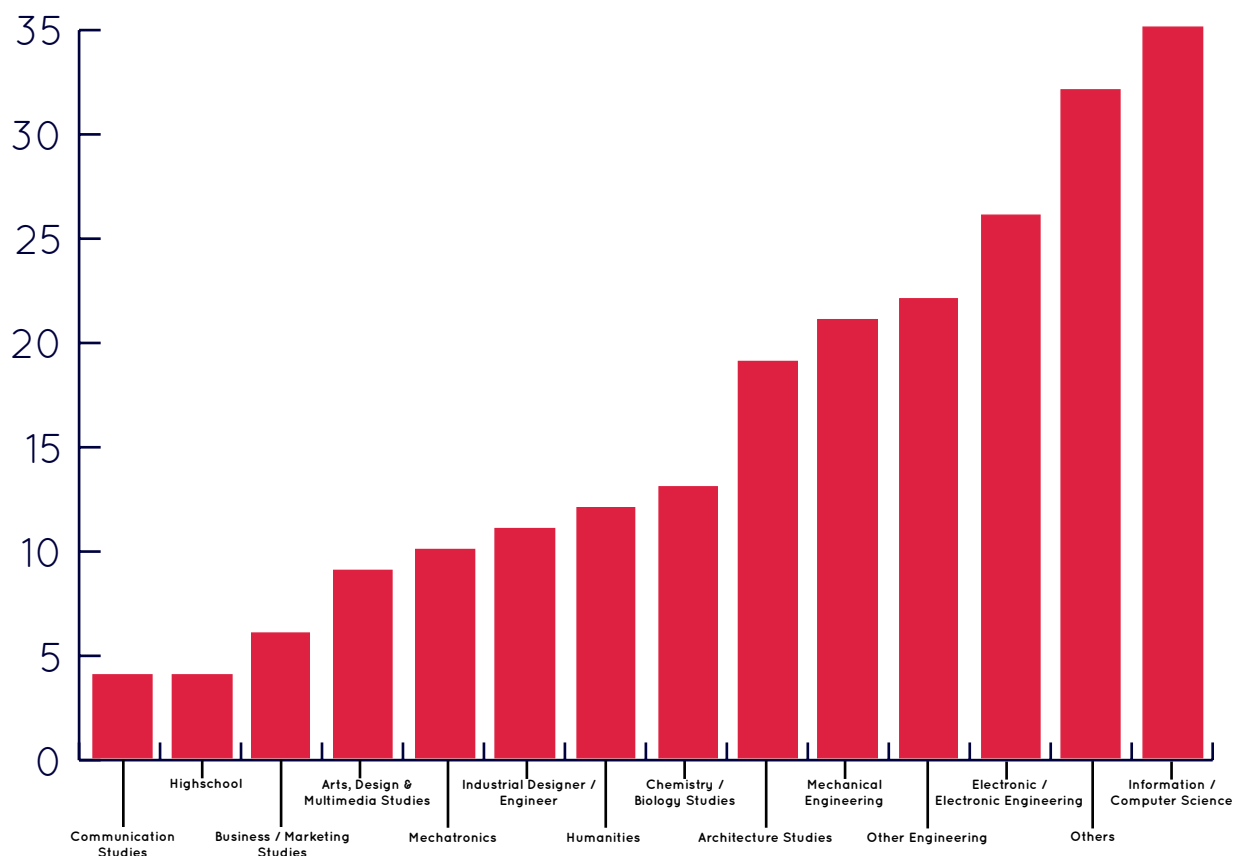


While Fab Academy is a highly technical course, it attracts a broad audience, 44.2% of which have no formal Technical Degree.



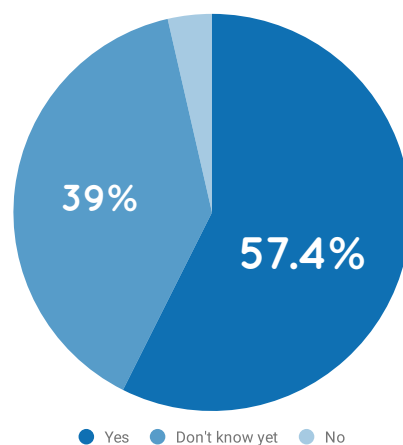
A similar proportion was seen in 2019 graduates.





Detailed graph of students' educational backgrounds 2019

Many Fab Academy graduates expressed an interest in becoming a Fab Academy instructor. When asked if they would be interested, students responded in the following way:



Our 2019 students' answers to the question: Are you interested in becoming a Fab Academy Instructor?

57.4% are interested in becoming Fab Academy Instructors, 39% would consider it, and only 3.6% are not interested in instructing later.

FINAL PROJECTS

During Fab Academy, each student must prove a level of mastery of the skills learned during the program by developing a Final Project, a prototype that tests an idea.

Every year we see amazing projects that cover a wide range of skills.

Featured Projects

During the last Fab Lab Conference (FAB15) in Egypt, this past year, students received their diplomas at the Fab Academy graduation ceremony. Select students were celebrated with an honorable mention for their high academic achievements. .

Below is a list of the featured 2019 Final Projects, selected by the Fab Academy community, taking into account the following criteria:

- Originality of the final project
- Field of knowledge of the final project
- Comprehensibility and clarity of the presented

Lux by Elena Cardiel - Fab Lab Leon (Spain)

Lux is an interactive piece of furniture which is able to recognize the ambient light level and the presence of the user, adapting the output of light.

FLO by Kae Nagano - Fab Lab Kamakura (Japan)

FLO is an interactive fireplace humidifier with ultrasonic mist, for relaxation and visual pleasure.

Laserbox by Leo Lhermitte - Fab Lab Sorbonne (France)

Laserbox is a dynamic scenography system using laser lights.

Neo Clock by Akhil G Babu - Fab Lab Kochi (India)

Neo Clock is a water spray alarm clock that sprays water on heavy sleepers if the off button is not pushed.

Automated Indoor Hanging Garden by Nagi Abdelnour - Fab Lab Berytech (Lebanon)

The Automated Hanging Garden controls lighting, watering and ventilation.

Force-Sensitive Longboard by Jonathan Prieto Abasolo - Fab Lab UTEC (Peru)

The Aerolongboard is a new concept of an Electric Longboard that combines a very light board, with two powerful motors powered by a battery pack.

Engrave by Antonio Grillo - Fab Lab Napoli (Italy)

E3 - EngraveCube is a little 6" Cube Engraver Machine.

Fab Buddy by Philippe Libiouille - Fab Lab Échofab (Canada)

Fab Buddy is a management device by Fab Labs that controls user access, machine performance, etc.

▶ **Smart Helmet by Miriam Choi - Fab Lab Seoul (S.Korea)**

The smart helmet reacts when the rider stops by changing the colors of the helmet light to red, signaling the environment that there are changes of movement occurring.

▶ **Mirru In Out by Pamela Cecilia Martello Arana - Fab Lab O Shanghai (China)**

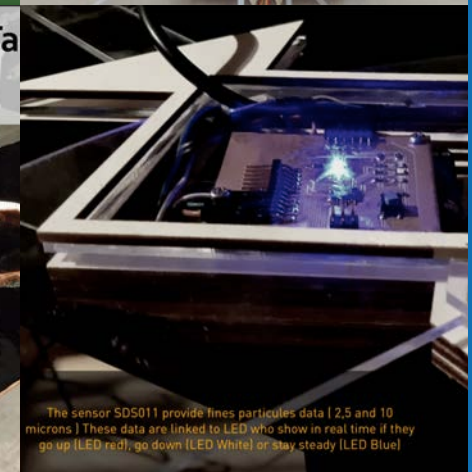
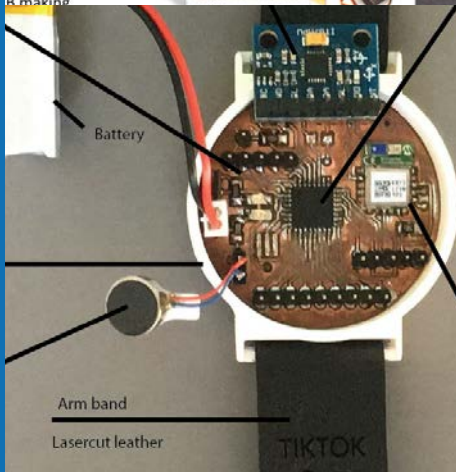
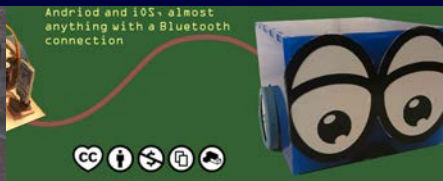
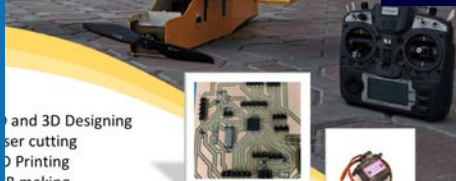
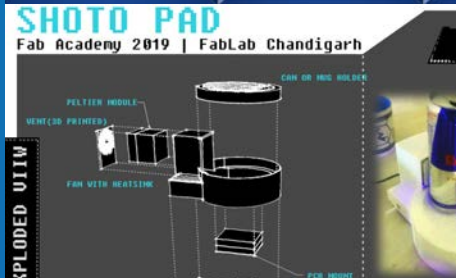
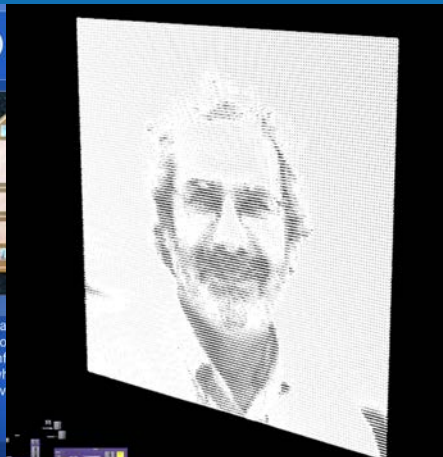
Mirru In Out is an entrance/exit system for cats to go in and out from their owner's house, protected with a magnetic key.



Other Final Projects that received an honorable mention...

Benjamin Lemay (**Worm Composter**), Xiaofei Liu (**Graphmics, a drawing music instrument**), Rutger Oomkes (**Introvert Light**), Perttu Piirainen (**Lighting System**), Felipe Santos Gomes (**Weather Report, art installation**), Thibault Chevreteau (**Le Roi Voyageur, interactive chess game board**), Gianluca De Rossi (**Vulcano Kiln, furnace for melting metals**), Samiul Hoque (**PixelFace, visualization tool**), Jesus Lopez de los Mozos (**Tumbleweed, a device for seed planting that mimics tumbleweeds**), Josep Maria Marti i Elias (**Fab-Kulele, Interactive musical instrument for teaching**)

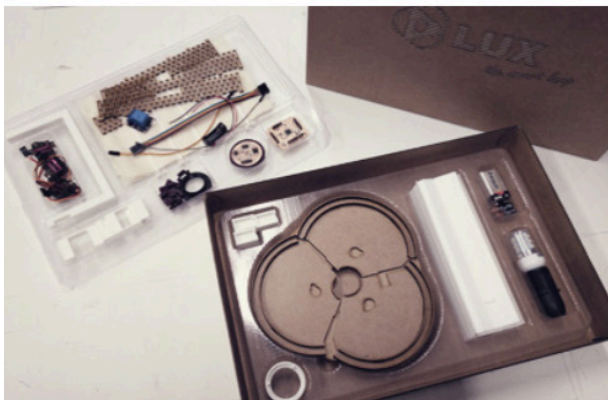
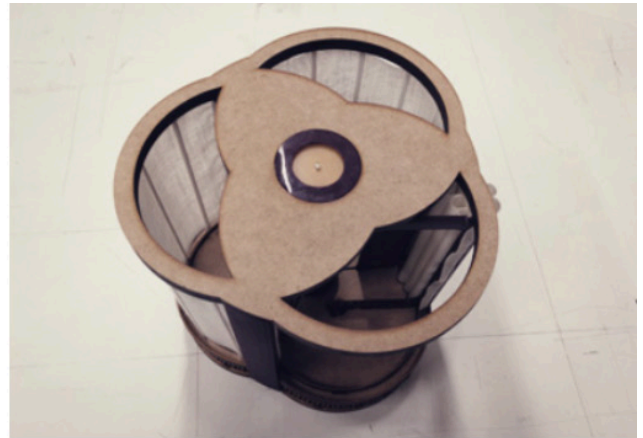
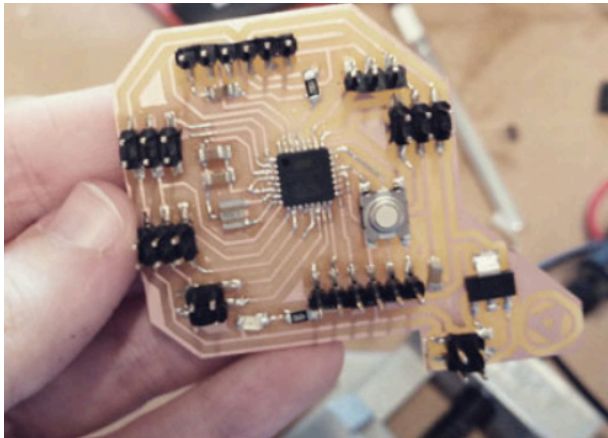
Below you will find a more detailed description of some of the final projects.



Lux, the Smart Lamp | Elena Cardiel - Fab Lab Leon



Elena Cardiel has been an architect since 2013, and is currently the manager of the Fab Lab IE University Segovia.



Lux is an interactive piece of furniture which is able to recognize the ambient light level and the presence of the user. It can be used to personalize the light of small-medium spaces, illuminating just the part of the room/table that is being used without disturbing the rest of the people in that same room/table, improving the quality of the environment and saving energy.

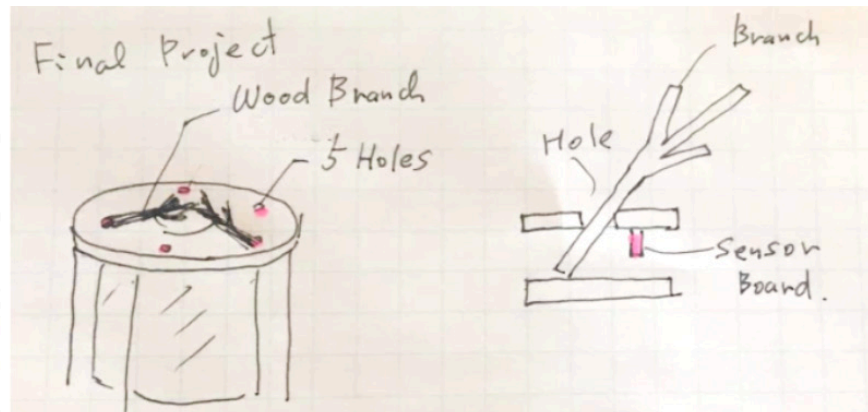
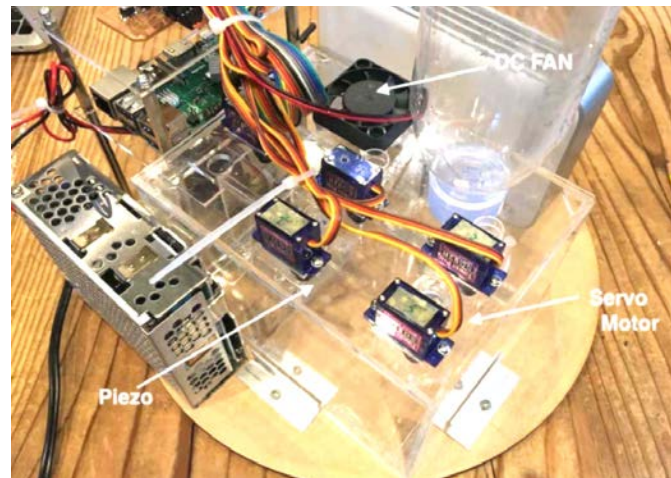
FLO, Fireplace-type Humidifier | Kae Nagano - Fab Lab Kamakura



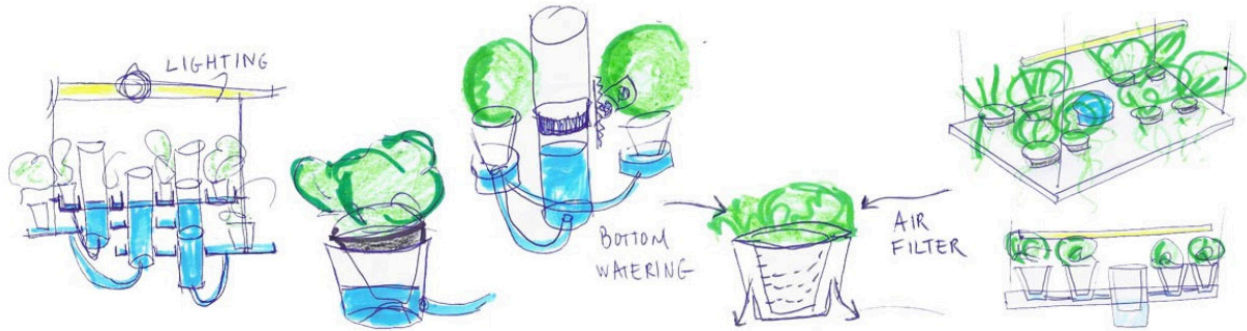
Kae Nagano is a user experience (UX) researcher, currently working for a Japanese electronics/entertainment company. Her background is in electrical control engineering.

Her final project, FLO, is an interactive fireplace humidifier.

The flame is generated by ultrasonic mist and is not hot. So even children can play by touching it. When you put new firewood, the size of the flame will change accordingly. The natural flow of flame makes you feel comfortable and healed.



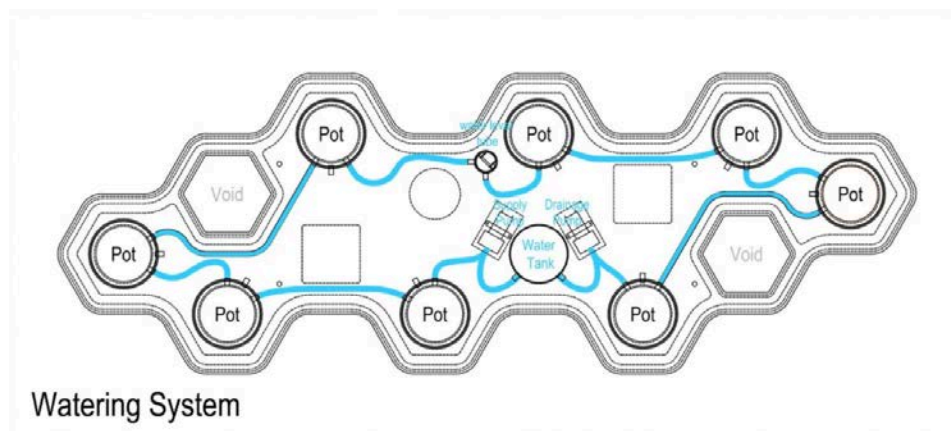
Automated Indoor Hanging Garden | Nagi Abdelnour - Fab Lab Berytech



Nagi Abdelnour obtained his Diploma in Architecture in 2003 and has been working as an architect ever since.



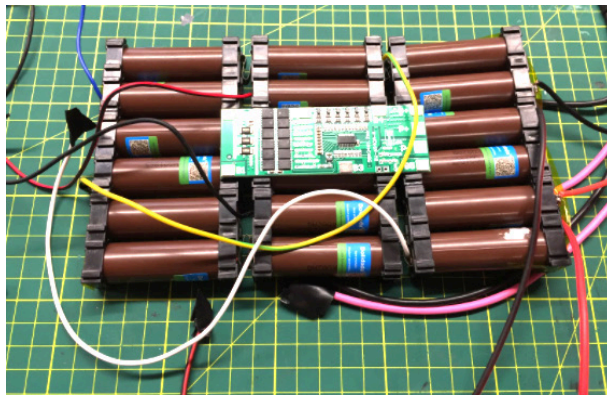
His final project, the Automated Hanging Garden, is a system that controls lighting, watering and ventilation for indoor gardens.



Force Sensitive Longboard | Jonathan Prieto Abasolo - Fab Lab UTEC

Jonathan Prieto Abasolo is a Computer Science student at UTEC University in Lima.

The Aerolongboard is a new concept of an Electric Longboard combining a very light board, with two powerful BLDC motors powered by a 6S3P battery pack. The longboard works with DIY Electronics made to also be able to control it with force sensitive resistors.



Composite Longboard:

- 3d Milling ShopBot for the Mold
- Composite Materials: Fiber Glass, Bamboo and Carbon Fiber
- Binder: Epoxy Resin
- Laser - Vinyl Cutter

Force Sensitive Longboard

DIY Electronics:

- POWER CIRCUIT FOR RGB LEDs
- Bluetooth Connexion
- PWM Output for ESCs
- FSR Input
- Battery Level Circuit

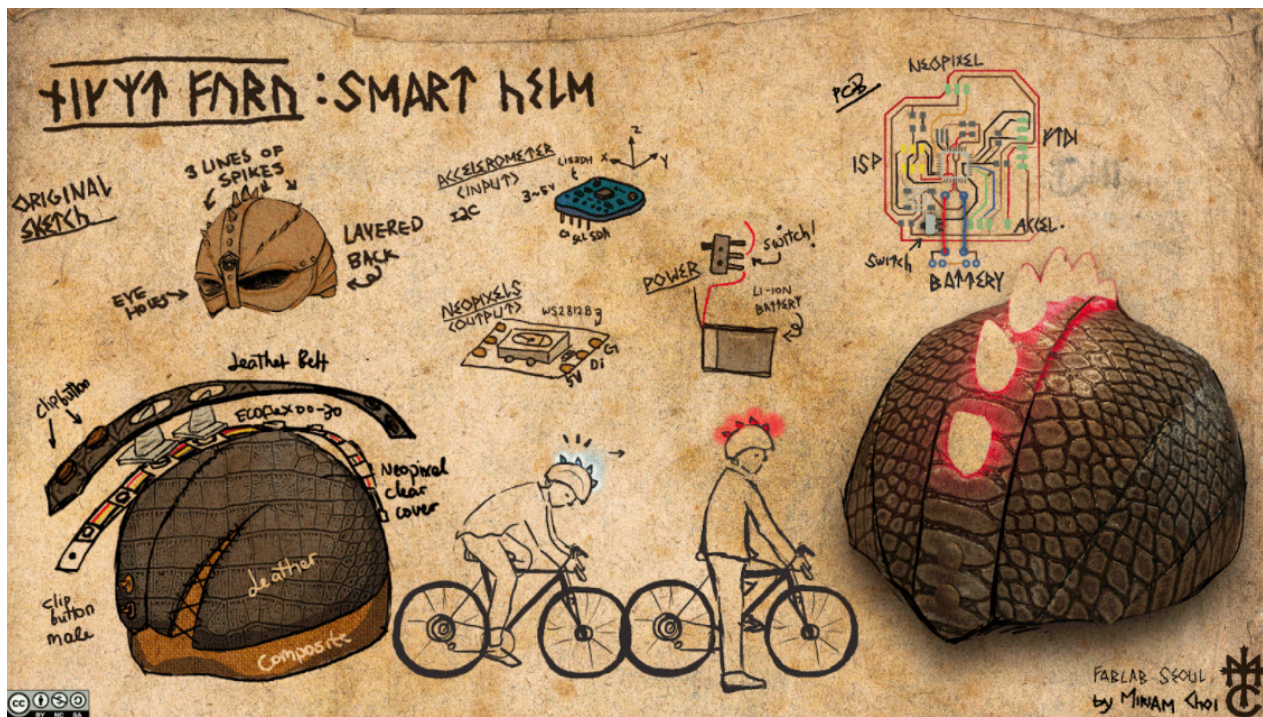
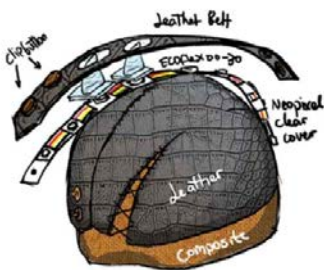
3D PRINTED PARTS

Smart Helmet | Miriam Choi - Fab Lab Seoul

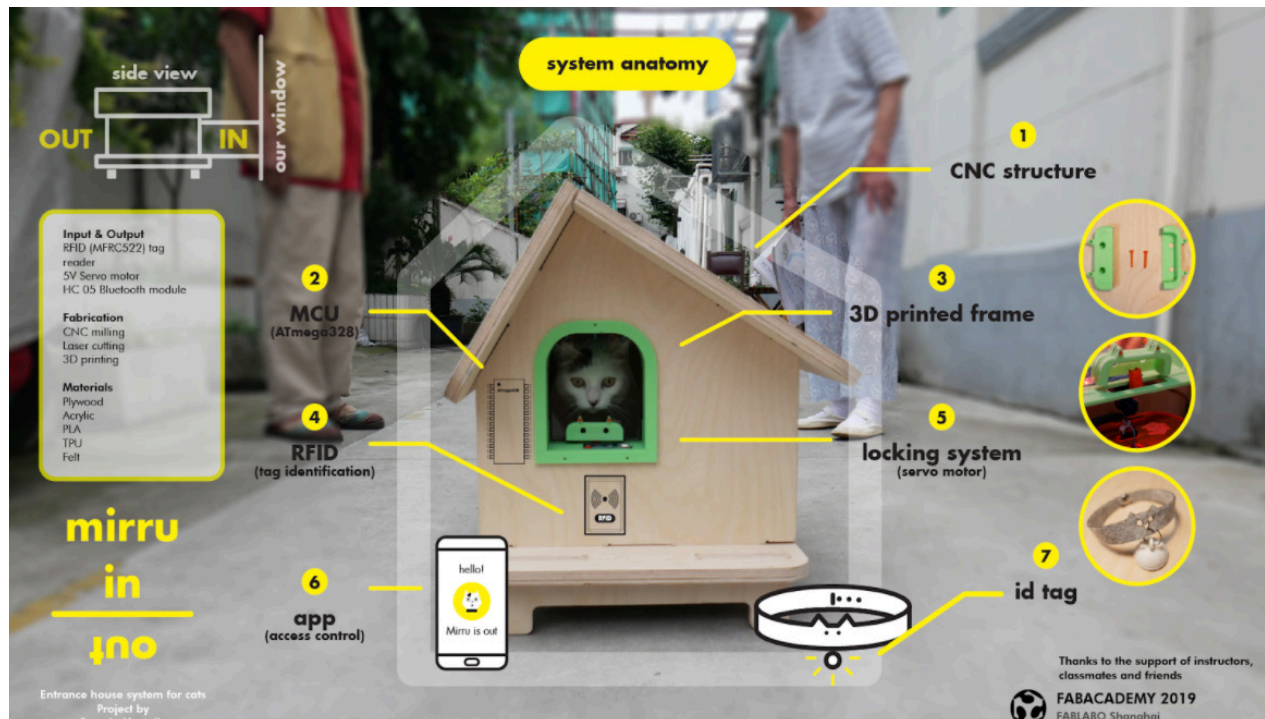


Miriam Choi graduated from University with a degree in graphic design, and has been an art teacher and designer ever since.

Her final project is a Smart Helmet Inspired by the movie, 'How to train your Dragon 3.' This smart helmet knows when the rider stops and changes the colors of the light to red, using accelerometer and neopixels; and goes back to green when the rider starts moving again.



Mirru In Out, Cat entrance-door system | Pamela Cecilia Martello Arana - Fab Lab O Shanghai



Originally from Mexico, Pamela is based in Shanghai, China. Pamela studied jewelry design and has worked as a designer for Chinese companies.

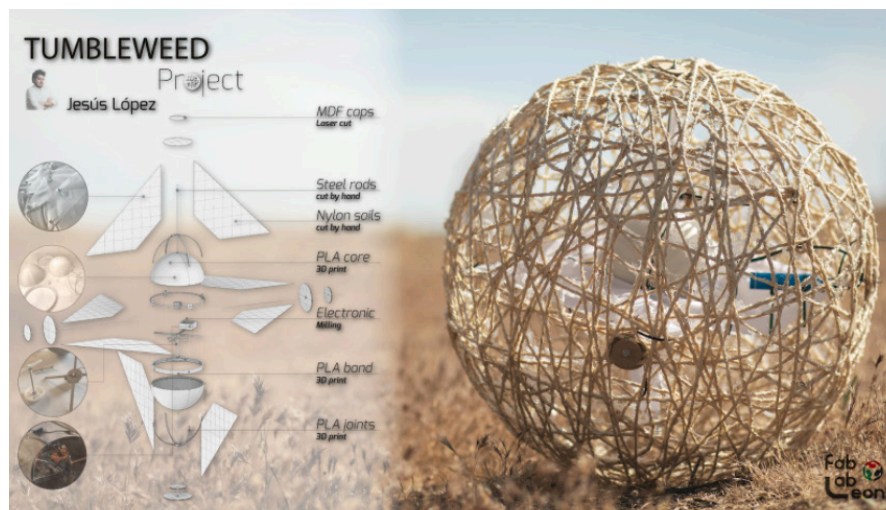
Her final project is an entrance/exit system for cats to go in and out from the house of the pet owner. The idea is for cats to access home with a special key (a tag) that enables the opening only to her/him and no other cat/animal.



Tumbleweed | Jesus Lopez de los Mozos, Fab Lab Leon

Jesús López is an architect and industrial designer, teaching design to students at the University of Madrid.

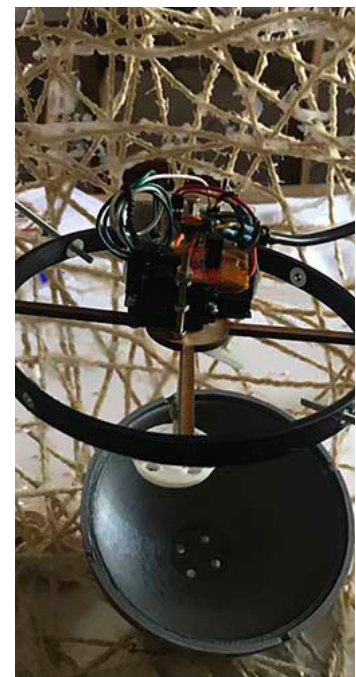
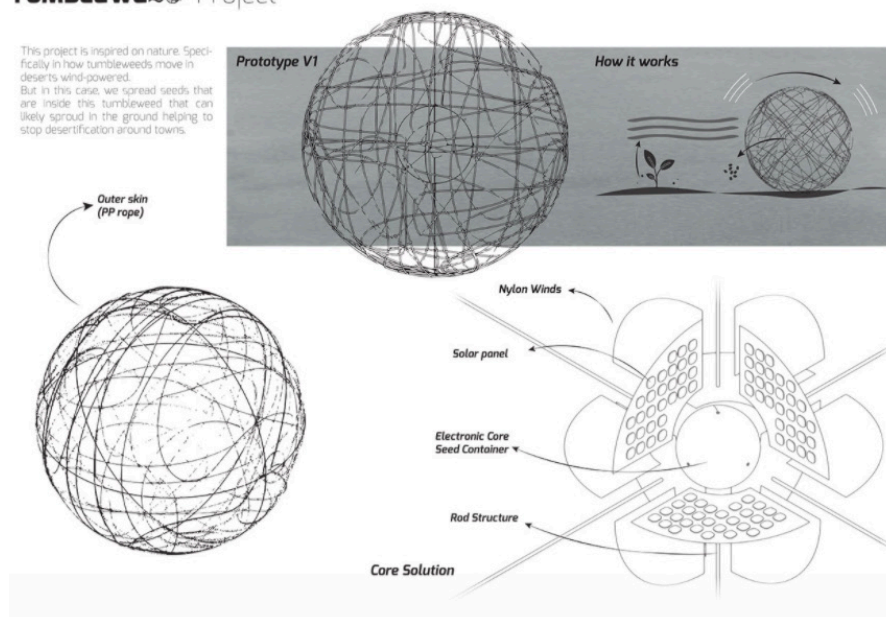
His Tumbleweed project is a biomimesis work, aiming to replicate a tumbleweed's behaviour, and use it for agricultural purposes.



The prototype is affordable, light, and wind-powered, and by movement, spreads seeds in abandoned places to help nature regenerate itself.

TUMBLEWEED Project

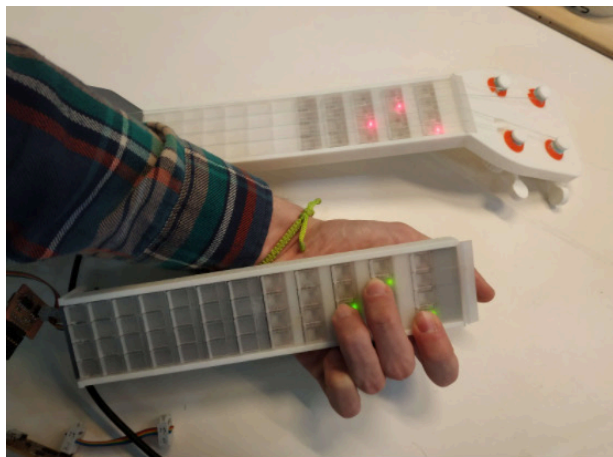
This project is inspired in nature. Specifically in how tumbleweeds move in deserts wind-powered. But in this case, we spread seeds that are inside this tumbleweed that can likely sprout in the ground helping to stop desertification around towns.



Fab-Kulele | Josep Maria Marti i Elias - Fab Lab Barcelona



The FabKulele is a smart Ukulele designed for learning. A portable, multisound Ukelele that is connected to the teacher's ukulele so he/she knows where to hit the key, while being connected to the computer to explore the chord library.



FINANCES

Fab Academy is a Distributed Educational Program globally coordinated by Fab Lab Barcelona and supported by the Fab Foundation.

[Fab Foundation](#) is a non-profit organization that emerged from MIT's Center for Bits & Atoms Fab Lab Program. Formed in 2009, the Fab Foundation facilitates and supports the growth of the international fab lab network. Its mission is to provide access to the tools, the knowledge and the financial means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything, thereby creating opportunities to improve lives and livelihoods around the world.

[Fab Lab Barcelona](#), part of the IAAC Foundation, is one of the leading Fab Labs in the European Union, focusing its activity in educational and research programs related with the multiple scales of the human habitat and the self-sufficiency agenda. It is the international headquarters of Fab Academy Global Coordination, and supports Fab Labs, Mentors, Instructors and students throughout the course.

Fab Academy Cost Structure

The Fab Academy program receives all of its financial support from the tuition fees

of the students enrolled in the course.

The content taught in Fab Academy is available for free online, and all of the classes and project documentation are available for anyone in the class archive. Students' fees cover the multiple services associated with the program, such as instruction and support, evaluation, and hosting documentation.

The program's tuition is used toward 2 main costs:

- **Local Costs** > The costs needed to run the course in the local Fab Lab (Node) that hosts the program.
- **Central Costs** > Infrastructural costs and services provided by Fab Academy Global Coordination and Administration.

The standard price for Fab Academy is **5000 \$/€**, divided into 50% Central Costs and 50% Local Costs. Students' tuition will sometimes be slightly more or less than the standard price, as the central costs are fixed (2500\$/€) but the local costs can vary depending on the Node's needs and requirements.

The Local Costs cover:

- 25% for Materials for projects
- 25% for Access to facilities
- 25% for Operations (such as running the class, placing orders, scheduling meetings and tracking students)
- 25% for Instruction (individual technical guidance)

The Central Costs cover:

- 35% for Coordination & Administration (common costs across classes, including managing finances, running logistics, keeping records, and supporting servers)
- 25% for Operations & Staff (regional supervision, mentoring and direct support for the class such as recording its videos)
- 25% for Faculty (preparing and delivering weekly lectures, running global reviews)
- 15% for Student support (review and accreditation of student work, registration for graduation at the FABx events and contributions towards scholarships)

In most cases, Fab Academy Global Administration receives students' full tuition, and then divides this tuition between Central Costs and other costs, which include paying any mentors who provided remote support, and reimbursing fab labs for their Local Costs when applicable. Occasionally, students will pay their fab lab directly for the Local Costs and pay Fab Academy Global Administration for the Central Costs (2500 \$/€).

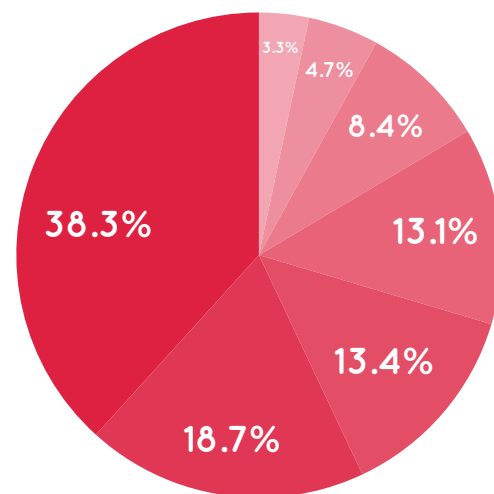
In 2019 Fab Academy Administration received **\$617,918 in income**. From the total amount, we paid around **\$161,268** to Fab Labs for Local Costs, and Professionals for their remote mentoring. The rest of the income, **\$456,650**, fell under Central Costs, as mentioned above.

Fab Academy has a Central Cost Breakdown Model that splits Central Cost income in the following way:

- 35% *Coordination & Administration*
 - ▶ 75% *Global Coordination (Fab Lab Barcelona)*
 - ▶ 25% *Global Administration and Support (Fab Foundation)*
- 25% *Operations & Staff*
- 25% *Faculty*
- 15% *Student*

Given the actual numbers from 2019, the Central Costs of **\$456,650** were distributed in the following ways:

Central Cost Distribution



Fab Academy Central Costs distribution per item

The percentages described in the pie chart above fall into the Central Costs Breakdown Model in the following way:

Coordination & Administration

- **38.3%** Central Administration and Coordination services.

Operations & Staff

- **13.4%** Communication support and campaigns
- **8.4%** Infrastructure (IT Services & others services)
- **4.7%** Global Assessment and Evaluation
- **3.3%** Regional Reviews and Node supervision

Faculty

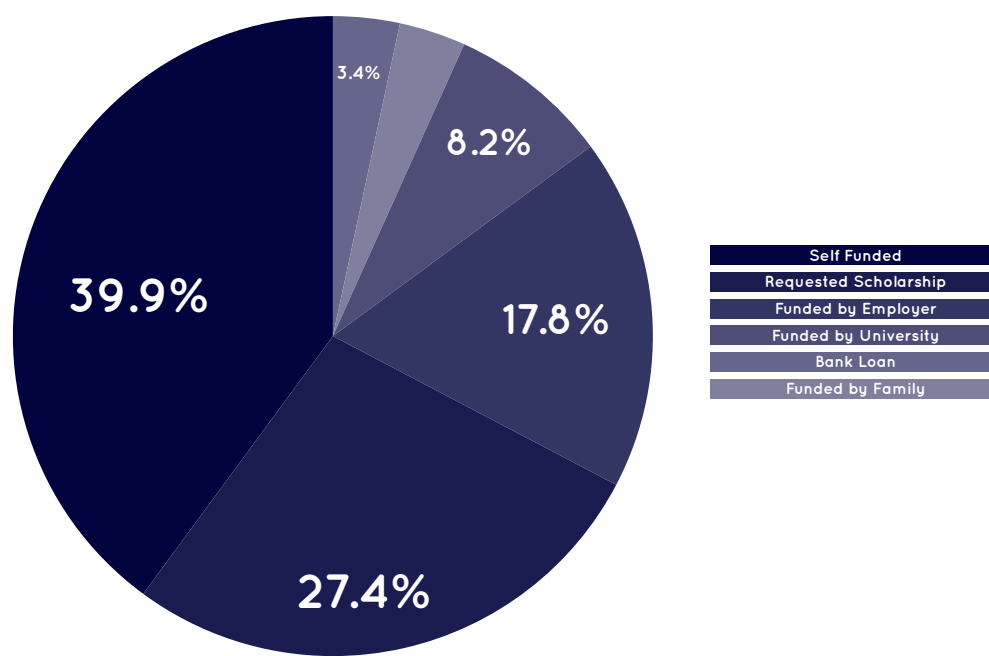
- **18.7%** Faculty, Recitations and Content

Students

- **13.1%** Entrance Tickets to FabX and Graduation Ceremony & Conference support.

Fab Academy Source of Income

Fab Academy students pay their course tuition through a variety of options. When asked in the Application Form how they would fund the course, students answered in the following ways:



Source of income, Students 2019

Employers and Universities represent slightly more than 25% of the income, demonstrating that employers see the strong benefit in their employees learning Fab Academy skills, and Universities are seeing the benefit that the Fab Academy Program has on the academic advancement of their students and their own Professors. Universities, corporations, and small businesses are endorsing the Fab Academy Diploma in both content and prestige.

FAB ACADEMY SCHOLARSHIP PROGRAM

The Fab Academy Program offers students a Scholarship Program, waiving portions of the Central Costs to cover partial scholarships and assisting students who are experiencing economic difficulties.

Scholarships are given to students with excellent academic backgrounds who cannot afford the cost of the course on their own. The scholarships are made possible due to Central and Local efforts to contribute toward tuition cost.

In 2019, Fab Academy granted **72** scholarships, for a total value of \$105,768.

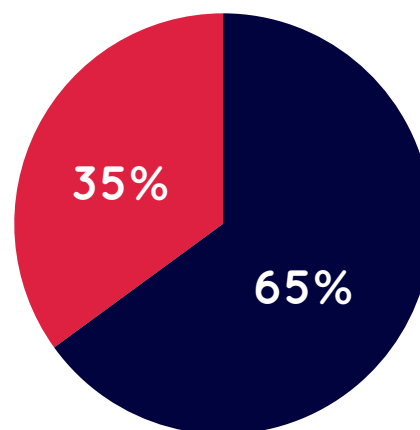
In total, **136** students received some kind of funding, either by Central Coordination and / or their local Fab Lab, or Private



Scholarship Distribution

Fab Academy Central Coordination Scholarships can be categorized as follows:

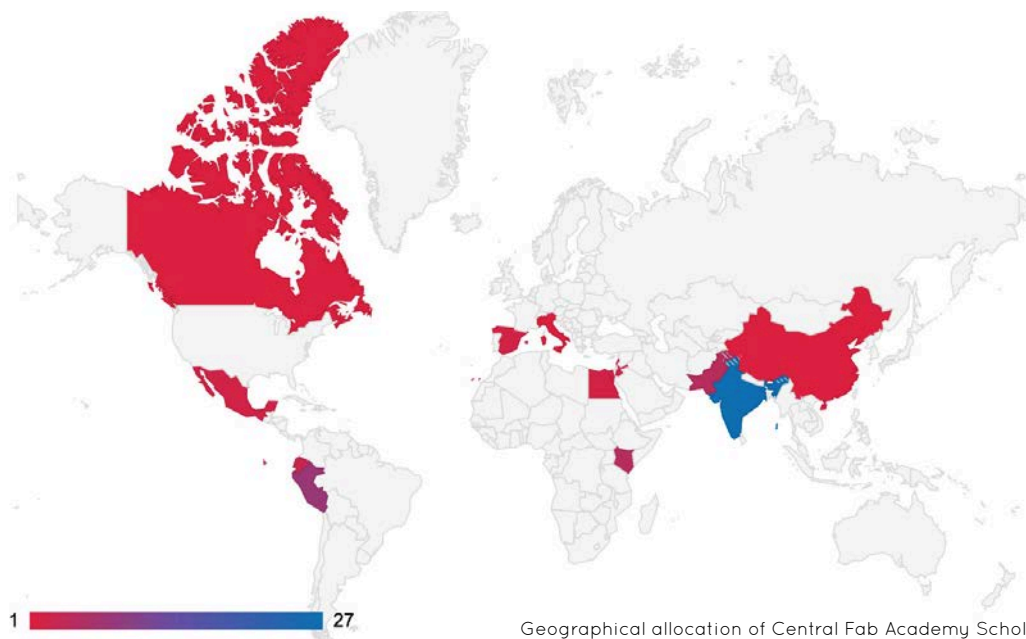
- Subsidized fees
- Highly subsidized fees



● Subsidized fees ● Highly subsidized fees (more than 60% waiver)

Type of funding received from Central Fab Academy, 2019

The map below categorizes Nodes according to the amount of Scholarships received by their students.



Geographical allocation of Central Fab Academy Scholarships, 2019

Scholarships for Fab Academy can come from Fab Academy Central Coordination, individual Nodes, public institutions, and private companies. When analyzing the Fab Academy scholarship program, the following conclusions can be drawn:

Europe: 7% of the scholarships were granted by Fab Academy Central Coordination, while 93% were granted by educational institutions (Universities, Fab Labs, etc.).

Middle East: In Egypt, Jordan and Lebanon, the students that received scholarships were partially funded by FA (Fab Academy) Central Coordination and partially funded by their Node.

In the case of Dubai, Saudi Arabia and Bahrain 100% of their students received a scholarship

granted by private companies.

Africa: While in Rwanda, 100% of the students received a full scholarship from a private company, in Kenya, the scholarship was completely granted by FA Central Coordination.

North America: 10% of the scholarships were granted by FA Central Coordination and the rest by private institutions.

Central and South America: 77% of the students that received a scholarship were funded by FA Central Coordination, while the rest were funded by a combination of FA Central Coordination and their Fab Lab.

In South Asia, almost all Indian students received a scholarship from FA Central Coordination.

FAB 15 Graduation Ceremony

FAB15 - Collectively Independent was the 15th Annual International Fab Lab Conference, which took place in Egypt from July 28th to August 4th, 2019. The event was hosted in two cities in Egypt: El Gouna by the Red Sea (Fab15 Main Conference) and Cairo (FAB Festival).



Fab Academy Graduation Ceremony, 2019, El-Gouna

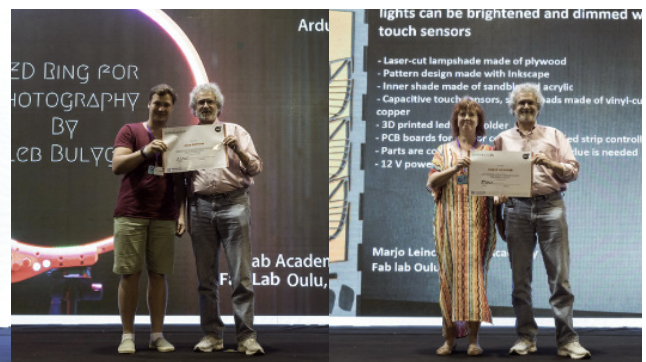
The International Fab Lab Conference gathers participants from more than 1,800 Fab Labs worldwide every year to share, discuss, collaborate and create community around various local and global interests regarding digital manufacturing, innovation and technology.

At Fab15, there were conversations and workshops around building strategic alliances that promote the inclusion of marginalized groups, and a transfer of knowledge and best practices to empower communities to solve their own technical challenges.

The **Fab Academy Graduation Ceremony** took place August 1st, 2019 during the event.

Approximately 50+ graduating students travelled to Egypt to receive their diploma in person and attend the weeklong celebration of digital fabrication.

Next year (2020) we will be holding an online conference- FabXLive- to discuss the impact and repercussions that Covid-19 will have on our economies, our communities, and our global society. The following year (2021), we will be holding FAB16 in Montreal, Canada!



IN MEMORIAM



Our colleague, good and dear friend, adventuring spirit, innovator and Bit Ninja Fiore Basile passed away on Nov. 13th 2019. We will forever hold him in our memory, and honour the tremendous work and love he put in our community.

In memory we'd like to tell you a bit about his life. Fiore had been coding since he was a kid, and soon moved on to networking. In the late 80's he first hosted a BBS in his room, then earned a Computer Science degree, founded two IT startups, managed EU IST research projects, built web and mobile apps and consulted for companies over 20 years.

In his late thirties he realized that software alone wasn't enough to make real impact in the world, so he got involved in the local fab lab movement, then joined the Fab Academy with Francisco at the Beach Lab and opened a public access Fab Lab in his hometown, Cascina, Italy. Fiore ran a network of digital fabrication labs all over Tuscany, connecting projects and infrastructure for a future of distributed manufacturing and education. Fiore became lead manager of infrastructure for multiple educational programs in the Fab Lab network such as Fab Academy and Bio Academy. He co-founded the Fabricademy course with Cecilia and Anastasia.

In 2017 he started Fabctory, a company of design and innovation that offered spin-off services from Fab Lab Toscana, with the goal of training the network and implementing local production of global design around the world, using the micro-factory model. Fiore liked to call himself the 'Plumber of the Fab Lab Network.' He was always a step ahead of everyone, and fixed any technical problem in the blink of an eye.

As a teacher, Fiore gave lectures in graduate and post-graduate classes, and conducted workshops in Fab Labs around the world. He was a global evaluator for Fab Academy and Fabricademy. In the past few years, he managed Fab Cloud, the IT infrastructure for the Fab Lab network. He also served as Chief Information Officer, or better known as 'Bit Ninja,' for the Fab Foundation. In his spare time he enjoyed making digital art and educational installations, such as constructing the largest Arduino-compatible board in the world, in Fab Lab UAE, Dubai. Fiore and Claudia have, of late, been traveling the world, giving talks, conducting workshops, creating IT infrastructure and communicating the fab spirit to one and all.

Fiore has been and will always be a part of the fab family, a part of all of us. We will miss him, and we carry his spirit and memory with us, always.

IN MEMORIAM

Fiore Basile was an inspiring and instrumental member of the Fab Lab Network, managing the IT infrastructure for fablabs.io, Fab Foundation, and Academany programs. He also co-founded the innovative Fabricademy course and supported the growth of the global Fab Lab network. Fiore always saw Academany graduation as an important step in bringing new individuals into the Fab Lab network. Academy Graduation is a time when the community embraces students' achievements and welcomes them to the network and to a world of opportunities, enabled by their pursuit of how to make (almost) anything!

His dream was to have ALL of the atoms of all graduates from around the world attend the FABx conference, after spending 6 months of classes together as online bits. In the spirit of the course, the goal is to covert bits into atoms.

Our goal is to receive at least \$20,000 to fund travel for Academany graduates from all over the world.

