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Site web > <http://www.enpc.fr/design-by-data>

Downloadable Student Portfolio with Research Papers > <http://www.enpc.fr/download/154646>

Facebook page > <https://www.facebook.com/DesignByData/>

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IMAGES FOR THE ARTICLE

All the images are available [HERE](#)

Zahhed's pictures are [HERE](#)

Adrien's photo portrait is [HERE](#)

Adrien's research project is [HERE](#)

CITA research project is [HERE](#)

ADRIEN RIGOBELLO VIDEO INTERVIEW

<https://www.youtube.com/watch?v=0IKvp2eHraw>

ARTICLE TEXT

Educating designers to Computational Design and Robotics can make architecture and construction more intelligent and sustainable

Program presentation

The Advanced Master¹ "Design by Data" in Computation Design & Robotics for Architecture and Construction was launched in 2016 and is one of the latest programs in innovative professional education at *Ecole des Ponts ParisTech*. The program was designed to meet the increasing need of the professional sectors of architecture and engineering to combine architectural awareness and skills in creative engineering. Design by Data trains professionals to master advanced design tools (coding, algorithmic approach, artificial intelligence) as well as digital manufacturing and design processes (robotics, 3D printing, electronics and mechatronics) applied to architectural and construction projects.

Attendees develop their knowledge in digital culture, and especially advanced mathematics and computational strategies, a scientific mastery of digital tools and innovative structural design as well as modelling and managing complex geometries. In addition to the core curriculum, students are also trained to parametric design and participate in two week long seminars (the first on imaging and AI, the second on an agent-based design approach) as well as a Research Studio once per month in which they need to define and develop their Research Project.

Attendees benefit all year long of access to a rich ecosystem, including research faculty of *École des Ponts ParisTech*, professionals of the field and internationally renowned experts from other countries based on the program's educational requirements and students' research projects.

Our Master's classes have a strong international dimension (with more than 15 nationalities represented); the majority of the students have an architectural or engineering backgrounds, but the Academic Board pays particular attention to also select atypical candidates (artists, designers and real estate professionals) who contribute to the enriching interactions amongst students.

4th edition just opened

The program just opened its applications for its 5th edition that will open in Paris in September 2020. With now more than 3 generations of graduated designers for the program, the Academic team is looking back to evaluate achievements of the program by analysing where students landed for their careers after the degree.

Carrer opportunitites after Design by Data degree are mostly situated in the following 3 fiels :

- **Architectural design studios and engineering consultancies.**

Bonny Nichol, Design by Data alumni graduated in 2018, currently works at [Hugh Dutton Associés](#), a firm which predominately uses computational design tools in the architectural design process and engineering calculations. Within the firm, Bonny combines her background of being a licensed architect (United States) and BIM specialist with computational design skills learned in the Design by Data Masters. Creating a vital link between computational design tools and software like Revit, Bonny helps her company utilise all types of models received by other consultants and internal models in an effort to create a holistic BIM model.

**** PICTURE OF HDA PROJECT HERE?****

- **Construction companies and innovative startups.**

Zaheed Lokhandwala, Design by Data alumni graduated in 2018, currently works at [Concreative - Large Scale Concrete 3D Printing in Dubai](#). His role at Concreative is that of an architect who devises computational strategies and parametric design solutions for large scale 3D Concrete Printing. It involves not only designing from scratch for clients but also reverse engineering designs received from Architects, Engineers, Interior Designers, Product Designers and Artists and optimizing them for 3D concrete printing. Zaheed says about his education: "through the 'Design by Data - Mastère Spécialisé' at the prestigious École des ponts ParisTech had a huge part in me developing the ability to manage these complex set of skills. Design by Data provided me with a cross-disciplinary culture of computational design and comprehensive knowledge in the fields of parametric architecture, robotics, digital manufacturing and 3D printing for the construction industry."

**** PICTURE OF ZAHEED HERE?****

- **Research**

Some of the students stays after the degree in the fields of education and/or research. This is the case of Adrien Rigobello that we interviewed of the occasion.

The case of Adrien

Adrien, how you got to know about the program and why you decided to enroll?

I have always been drawn towards applied arts. In 2015 I started frequenting [Volumes Hub](#) in Paris, and the words of Design by Data were laid out on a conference organized there, definitely piqued my interest. With the executive format of Design by Data I managed to convince my company, and enrolled into this horizon widening program, along with twelve other incredible soon-to-be friends.

How did the Design by Data experience looked like in terms of professional opportunities, education framework and networking ?

The academic team at Design by Data features some of the most foreseeing and best computational practitioners out there. The whole learning experience is focused on the student research project. Which is very beneficial as one gets to be able to tune his or her learning experience, and combine learnings, concepts and methodologies with his or her passions somehow.

**** PICTURE OF ADRIEN HERE?****

What was your Research Project about and which tutors helped you ?

I focused on trying to implement a clay-mycelium material to lessen the dessication rate of clay in optimized geometries (typically 3D printed clay). My tutor was Aldo Sollazzo, member of Design by Data Faculty and founder of [Noumena](#). He was very helpful in offering opportunities to extend my network, and gave me the support and confidence to go all the way with this research!

**** PICTURE OF ADRIEN'S PROJECT HERE?****

How did your professional career changed after the program ?

After the graduation, Ecole des Ponts ParisTech trusted me into the position that they opened to be both the academic coordinator of Design by Data, and the makerspace manager in the school. A truly sweet opportunity I must say, that helped me realize that education, transmission, is basically what passions me the most - along with being part of highly motivating young advanced master's program.

**** PICTURE OF MAKERSPACE HERE?****

What's new ?

The research laboratory CITA (KADK, Copenhagen) is about to start the [EU H2020 funded FUNGAR](#) project to research on the integration of biocomputing within architectures thanks to mycelium. I am so honored to say that I am about to start a PhD on this topic along the consortium around this research project, within CITA. This is in perfect contrinuity with my Design by Data Research Project.

**** PICTURE OF CITA HERE?****

**** VIDEO OF ADRIEN HERE?****