

Beyond open access



↳ “Experimental investigation of electrical domestic heat pumps equipped with a twin-stage oil-free radial compressor” is the first thesis published under a Creative Commons (CC) license at EPFL. After many years of research, Jean-Baptiste Carré gives access in 2015 to his whole PhD work under CC BY license and shows the numerous advantages of these licenses for research and researchers. Interview.

Aurore Granval
Information scientifique et
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Mechanic engineer, J.-B. Carré holds a diploma from the Ecole d'ingénieurs arts et métiers ParisTech. He decides to continue his research at the EPFL on the development of machines in the energy field.

What was the subject of your EPFL thesis?

→ The Industrial Energy Systems Laboratory (LENI) was developing since the 2000s a new heart for machines that allows heating houses in an environmental friendly way. My PhD thesis, achieved in collaboration with the Swiss industry, aimed to integrate this new heart in existing or pre-industrialized machines. The developed products are commercialized on the market of home heating machines.

Why did you choose to publish your thesis under a CC license?

→ I was using free softwares and licenses in my leisure time. I wanted my thesis and everything I was going to develop, like figures, data, graphics, etc., to be reused by everybody and that all my codes could be supported by open source softwares and bookshop.

Science should be disseminated, criticized, and reproduced. The most effective way to do it is to free everything under a license obliging only the mention of my name as the author.

Which constraints did you face?

→ In my thesis script, I couldn't put figures from scientific articles. I had to redo them from data or ask my colleagues to put their pictures under a CC license.

The thesis was financed by the industry, thus the question was how to manage the confidentiality and reutilization of my work? I considered that all the confidential elements belonged



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to the company and they had to decide what could become public or not. However, everything that was useful for realizing the thesis (codes, LaTeX sources, scripts, data, figures, photos, etc.) are under CC BY or GPL license. In my thesis, there are no exact plans of the machines developed in order to not disclose the company strategic elements, but all the contents that concern the scientific aspects are present.

A transparent work implies rigor. If I want it to be reused, it must be understandable and well documented. It is a constraint, because it means that you have to spend time on that issue. But it is an ethical duty for a researcher, and publishing my thesis under a CC license goes in the same direction.

What are the advantages of publishing under a CC license?

→ The first advantage is an ethical one. I feel comfortable with my work. Everything is open, can be reproduced and verified.

I can modify the elements

of my thesis over time and bring corrections freely. The thesis peer reviewed version is the 1.0.2. as long as version 1.1 is not achieved, the one on Authorea or Github is compatible with the one submitted to the thesis jury.

The technical developments invested in this thesis were expensive. I prefer to make everything free, in order to give access, rather than keep the rights, and thus constraint people to bypass what I did in a more or less legal way. If my work is easy to be reused and capitalized on, I have more chances, scientifically speaking, that someone understands what I am doing and cites me in another work or reuse it.

Why didn't you choose a non-commercial clause for your thesis?

→ Unfortunately, I do believe that change in the world takes place in the economic context. I prefer that developments I contributed to are useful to mankind in a way or another. If a small company in Cameroon wants to reuse

my ideas, or any other element disseminated in my thesis work, I would like it to be reused without any legal implications. Likewise, if a professor wants to use my work in a book or teaching, I wish him to do it easily.

What was the opinion of your thesis director?

→ He was not against as long as CC licenses were compliant with the EPFL publishing conditions. This can nevertheless be different in other laboratories, where research subjects are easier to be replicated by competing laboratories. In the case of a sterile scientific competition, it is possible that professors are against the dissemination and reuse of contents, data, etc. Fortunately, my thesis director abounded in the same opening and dissemination direction.

Why did you publish your thesis on Authorea (see box)?

→ Authorea is a collaborative writing platform, on which it is possible to comment and open

discussions on my thesis. This particular aspect is interesting, because I like the fact that it is possible to increase knowledge anytime and that a public space for discussing exists.

Disseminate knowledge as much as possible, giving access to basic knowledge allows to us emancipate oneself. Thanks to

Authorea, anyone, and particularly EPFL researchers who will continue my work, can ask questions on unclear sections, criticize the conclusions or the work.

What are your projects?

→ I am working at the Haute Ecole d'ingénieurs in Yverdon. I am collaborating in projects on

technologies related to the ones developed of my thesis, in collaboration with EPFL. The data I was producing during my thesis were for my own use. Now I am working with other people who need to use those documents for their researches. It implies to set up other working procedures, that are far above licenses and that

require good practices to be able to collaborate. This is one of the aspects I like to explore in the work I am currently doing and aspects on license and reuse are central to this approach. ☰

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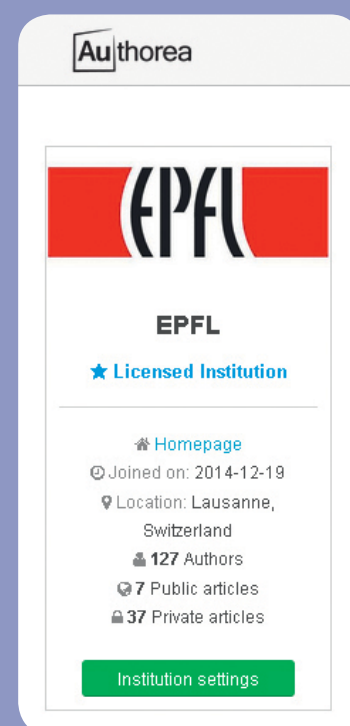
→ <http://go.epfl.ch/JBC>

An Authorea site license at EPFL

↳ Born in CERN, Authorea is a tool created by researchers for researchers. It allows several people to write a document simultaneously, to cite its sources easily, to keep the modification history (based on Git) brought to the document, and to access an older version anytime. Authorea also allows to pre-format your article for different editors (IEEE, Elsevier, PLoS, Science, Nature, Springer, BioMed Central, etc.)

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↳ www.authorea.com/



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<http://go.epfl.ch/M8>

Some numbers

- 2013: platform birth
- 50'000: active users, 126 EPFL accounts
- 3300: articles created (among which 1300 public ones)

Contact

- Do not hesitate to contact EPFL library for more information.
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