

# Léonard BLIER

## PERSONAL DATA

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BIRTH: France | August 31th, 1993  
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GITHUB: [leonardblier](https://github.com/leonardblier)

## EDUCATION

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2013 - 2018 | Student in MATHEMATICS, **École Normale Supérieure**, in Paris  
Master 2 including: Topology, Probability, Signal Processing, Optimisation, Geometry  
Master thesis: *Deep Learning and Universal Compression Bounds*, under the supervision of Yann Ollivier  
Master 1 including: Statistics, Machine Learning, Functional Analysis, Logic, Differential Geometry  
Bachelor, including: Probability, Signal processing, Algorithm, Algebra, Compilation, Topology

2011 - 2013 | “Classes préparatoires” MPSI - MP\*, **Lycée Louis le Grand**, Paris

2011 | Scientific “Baccalauréat”

## EXPERIENCE

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APRIL 2017 | Research internship under the supervision of **Yann Ollivier**, team **TAO**, INRIA  
OCT 2017 | *Deep Learning and Universal Compression Bounds*  
Universal Compression Bounds are tools for statistics and machine learning that can be seen as a formalization of the well-known Ockham razor principle, which states that we should always choose the simplest model that explains the data. We described how deep neural networks can be seen as *simple models*, despite their number of parameters.  
My master thesis on this topic can be found on my website.

2015 - 2018 | Oral examiner (“colleur”), lycée **LOUIS LE GRAND**  
Oral examination in Mathematics for undergraduate students in “Classes préparatoires”, two hours per week.

JAN 2016 | Internship at **HEURITECH**, Paris  
JUNE 2016 | Heuritech is a French startup specialized in Deep Learning, applied to Social Media Intelligence. I was in the R&D team, working on models for solving different problems (Image classification, Attention Models, Question Answering).

SEPT 2015 | Research internship under the supervision of **Gaël Varoquaux**, team **PARIETAL**, INRIA.  
DEC 2015 | *Statistical inference on fMRI data*  
The project was to design statistical tools allowing neuroscientists to validate hypotheses about what brain regions are involved during different activities.

JUL 2014 | Research internship under the supervision of **Jonathan Taylor**, Stanford University  
AUG 2014 | *Statistical inference after model selection*  
I worked on *selective inference*, a method for statistical inference after model selection (LASSO, PCA, ...). I applied these methods to *k-means* and developed the Python library implementing these methods.

2014 - 2015 | President - Student organization **LES ERNEST** (Ecole Normale Supérieure), [les-ernest.fr](http://les-ernest.fr)  
“Les Ernest” was a student organization, organizing each year a few days of short conferences given by renowned researchers on a very large set of topics, shooted and broadcasted on the web. As the president of this organization, I managed the team of students working on this project, looked for fundings, spreaded the videos, and organized three days of conferences.

## LANGUAGES

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FRENCH: Mother tongue  
ENGLISH: Fluent

## COMPUTER SKILLS

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Know well: Python, Numpy, Keras  
Good at it: Theano, Pytorch, Scikit-learn, Unix, Ocaml, Ruby, C, C++, Emacs,  $\LaTeX$ , Git