

I am a research scientist at Columbia University, where I build open-source software for machine learning.

EXPERIENCE

- Research Scientist** 2018 – Present I am currently an associate research scientist at the [Data Science Institute](#) of Columbia University, where I work in [Andreas Müller](#)'s team. I develop and maintain the popular machine learning library [scikit-learn](#), with the mission to propose high-quality software and democratize data-science applications. Prior to that, I was a postdoctoral researcher in the same team.
- Data scientist** 2018 – 3 months I was data scientist at [Pluvio](#), where I built machine-learning-based recommender systems in Python.

TECHNICAL SKILLS

I am expert in Python development, and with the Python scientific stack, in particular Numpy, Scipy, Cython and Numba.

Open-source projects

I contribute to various OS projects for my job, but also during my free time.

Scikit-learn: As a [scikit-learn](#) core-developer, I actively develop and maintain the project. I take part in major design decisions, review code proposals, and contribute with new features.

Surprise: During my PhD, I developed [Surprise](#), a Python library to build and analyze recommender systems. Over the years Surprise has become one of the most popular recommendation libraries (**4k stars on GitHub**).

EDUCATION

- Machine Learning PhD** 2014–2017 I studied analogical classifiers—somewhat related to k -NN learners—from a theoretical point of view in terms of convergence, error rate and inference principle. I also applied analogical learning to recommender systems, which led me to develop [Surprise](#): a popular Python package for recommendation. *University of Toulouse III, France.*
- Master's Degree** 2014 Artificial Intelligence at University of Toulouse III
- Master's Degree** 2013 Computer Science Engineering at Institut National des Sciences Appliquées of Toulouse, specialized in critical embedded systems and software development
- Exchange Program** 2012 I studied one semester at the Faculty of Engineering of the University of Buenos Aires (Argentina)

PUBLICATIONS

- [1] N. Hug, *Contributions to the use of analogical proportions for machine learning: Theoretical properties and application to recommendation*. PhD Thesis, [link](#).
- [2] M. Couceiro & N. Hug & H. Prade & G. Richard, *Behavior of Analogical Inference w.r.t. Boolean Functions* IJCAI 2018: 2057-2063. [link](#).
- [3] M. Couceiro & N. Hug & H. Prade & G. Richard, *Analogy-preserving functions: A way to extend Boolean samples*. IJCAI 2017: 1575-1581. [link](#).
- [4] N. Hug & H. Prade & G. Richard & M. Serrurier, *Analogical classifiers: A theoretical perspective*. ECAI 2016: 689-697. [link](#).
- [5] N. Hug & H. Prade & G. Richard & M. Serrurier, *Analogy in recommendation. Numerical vs. ordinal: A discussion*. FUZZ-IEEE 2016: 2220-2226. [link](#).
- [6] N. Hug & H. Prade & G. Richard & M. Serrurier, *Experimenting analogical reasoning in recommendation*. ISMIS 2015: 69-78 [link](#).