Nicolas Hug

Machine learning PhD, Software Engineer

Hi, I am a machine learning PhD with strong programming skills, and I am currently looking for a job! I live in France but I'm very flexible and mobile, willing to work abroad.

Experience

2014 - 2017 **Phd Student in Machine Learning**, *at the Research Institute in Computer Science of Toulouse (IRIT)*, supervised by Henri Prade, Gilles Richard, and Mathieu Serrurier.
The goal of my PhD is to study the empirical behaviour of analogical classifiers (somewhat related to k-NN classifiers) and to exhibit some of their theoretical properties. Two of my main publications so far was are:
- ECAI'16: Analogical Classifiers: A Theoretical Perspective.
- IJCAI'17: Analogy-preserving functions: A way to extend Boolean samples (to be published).

2014 **Machine Learning Research Internship (6 months)**, *Intelligent Systems Lab*, University of Bristol, UK.
Design and development of a classifier for musical instrument sounds, mostly using linear models.

2013 **C developer internship (6 months)**, *Laboratory for Analysis and Architectures of Systems (LAAS)*, Toulouse, France.
Development of a prototype for an embedded automotive application on a Freescale PowerPC chip.

Technical skills

While my educational background is that of a software engineer, my research work as a PhD student allows me to be also well-versed in machine learning (and of course data science), on both theoretical and practical aspects. I have developed a solid mathematical background (statistics, linear algebra, optimization...) over the years.
I am highly proficient in Python and C, and very familiar with Python's scientific tools (Scikit-learn, Numpy, Pandas, Matplotlib) and with Cython (for optimization). Other languages I am acquainted with are OCaml, Java, C++, Ada, Prolog and Php.

Open source projects

Recommender Systems — During my free time I developed (and now maintain) Surprise, a Python library to build and analyze recommender systems. This project has been the opportunity for me to combine my theoretical understanding of machine learning and my programming abilities into a complete, useful and easy-to-use software, which I believe showcases my range of skills.

OS development — In 2012, with three other students: we designed and developed in C++ a graphical user interface for a student Operative System. We developed everything, from the graphics drivers (VGA and VESA) to a widget toolkit and the end user applications, such as a terminal emulator, a file explorer, an image viewer and a paint-like program.

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nicolas-hug • 26 years old, fluent in French, English and Spanish.

Teaching activities

As part of my PhD I gave various lessons - mostly tutorials and practical works, at both undergraduate and postgraduate levels. The main topics include concurrency and threads in C, programming basics (Ocaml, Python, Ada), graph theory, linear programming and reinforcement learning. I also gave a few lectures on general AI to freshmen.

Education

2014 **Master's Degree in Artificial Intelligence**, *Université Paul Sabatier.*
Valedictorian (over ten students).

2013 **Master's Degree in Computer Science engineering, specialized in critical embedded systems**, *Institut National des Sciences Appliquées of Toulouse (INSA).*

2012 **Six months Student Exchange Program**, *Faculty of Engineering of the University of Buenos Aires.*

More about me

When I'm not working on my PhD or on my project Surprise, you may find me rock climbing or hiking, lost somewhere in the Pyrénées (French mountains)... I always enjoy any kind of outdoor physical activity, which is quite fortunate given one of my other passions: food!