

Postdoctoral position at École Normale Supérieure de Lyon

The [DANTE team](#) at ENS de Lyon, France is seeking highly qualified candidates for a postdoctoral position on the algorithmic and mathematical foundations of resource-efficient machine learning, in the context of the [ACADEMICS](#) project (*Machine Learning & Data Science for Complex and Dynamical Models*) funded by the [IDEXLyon](#).

Objectives

Solid algorithmic and mathematical foundations are essential to endow machine learning systems with guaranteed utility, resource-efficiency and trustworthiness. A particular challenge is to control the tradeoffs between performance and computational footprint to exploit massive data streams.

The recruited postdoc will conduct a vigorous research program within the scope of the project, and is expected to show independence and team working attitude at the same time.

The successful candidate, which can come from different areas (applied mathematics and statistics, signal processing, machine learning, information theory, computer science) is expected to bring expertise to the ACADEMICS task force and will be encouraged to develop collaborations with other groups at ENS de Lyon.

The position is endowed with travel, computing, and experimental resources.

Sample research topics include: *Expressivity and Robustness of Sparse Deep Networks; Provable Algorithms for Sparse Deep Learning; Random Sketches for Efficient Manifold & Graph-based Learning.*

Context

The [ACADEMICS](#) project gathers a research group to explore the frontiers of Signal Processing, Machine Learning and Physics under the auspices of sparsity and graphs for complex systems. With its task force of graduate students and postdocs with different scientific backgrounds, the project develops the mathematical and algorithmic foundations of new ways to extract information from complex data, with targeted applications in climate dynamics and social systems modeling.

Environment

The DANTE team is part of the Laboratoire d'Informatique du Parallélisme (LIP) and the Institute of Complex Systems (IXXI) located on the campus of École Normale Supérieure (ENS) de Lyon, in the historic city of Lyon famous for its food and its districts part of UNESCO's World Heritage.

ENS de Lyon, arguably one of the most prestigious *Grandes Écoles* in France, is a major player gathering researchers from several scientific disciplines including mathematics, computer science, and physics in a highly international environment.

Starting date and duration: early 2020, one year - renewable

Location : <http://www.ens-lyon.fr/en/>

Scientific Contact: remi.gribonval@inria.fr

To apply:

Applicants are requested to send a detailed CV, a list of publications and a brief statement of research interests. This material, together with two letters of reference, shall be sent to remi.gribonval@inria.fr

The DANTE team develops mathematical and statistical signal models and algorithms with an emphasis on acoustic and audio applications. It gathers around 20 researchers, post-docs, PhD students and engineers with expertise in various fields of mathematical and statistical signal processing and audio.

Qualifications required

Candidates should hold a Ph.D., and will either be applied mathematicians with interest for statistical signal processing, and good programming skills, or originate from signal processing / computer science with solid background in applied mathematics and statistics. Previous experience in sparse signal representations or statistical machine learning is preferred, but experience in related areas is suitable.