

Quentin Bertrand

Education

- 2018 – **PhD in Computer Science**, Inria, Saclay.
- 2017–2018 **MS in Computer Science**, École Normale Supérieure, Cachan.
- 2014–2017 **BS and MS in Engineering**, École polytechnique, Palaiseau.

Research

I am currently a second-year Ph.D student in statistics and optimization under the supervision of [Joseph Salmon](#) and [Alexandre Gramfort](#) (core [scikit-learn](#) contributor).

I work on model calibration for high dimensional sparse linear regression applied to brain signals reconstruction:

- Formulated optimization problems to handle sparse linear regression with correlated noise as smoothing-based optimization problems, see our [paper \[1\]](#) and the open [python code](#).
- Theoretically studied the statistical influence of smoothing parameters for the *square-root Lasso* and the *multivariate square-root Lasso*, see our [paper \[2\]](#).
- Developed algorithms for fast forward differentiation of Lasso-type models [\[3\]](#).
- Contributed to the open-source library [MNE](#), a signal processing package for neuroscience.

Work Experience

- 2017 **Stanford Research Institute**, *Research Intern*, Menlo Park, CA.
 - Worked on the DARPA project [Probabilistic Programming for Advanced Machine Learning](#).
 - Developed and implemented new algorithms to compute exact bounds in graphical models.

Publications

- [1] **Q. Bertrand*** ; M. MASSIAS* ; A. GRAMFORT ; J. SALMON: Handling correlated and repeated measurements with the smoothed multivariate square-root Lasso. In: *NeurIPS* (2019)
- [2] M. MASSIAS* ; **Q. Bertrand*** ; A. GRAMFORT ; J. SALMON: Support recovery and sup-norm convergence rates for sparse pivotal estimation. In: *AISTATS* (2020)
- [3] **Q. Bertrand*** ; Q. KLOPFENSTEIN* ; M. BLONDEL ; S. VAITER ; A. GRAMFORT ; J. SALMON: Implicit differentiation of Lasso-type models for hyperparameter optimization. In: *ICML* (2020)

Teaching

- 2019–2020 [Numerical Methods and Applications](#), BS ENSAE, Prof: [S. M. Kaber](#)
- 2019–2020 [Optimization for Data Science](#), MS Data Science, Prof.: [A. Gramfort](#) and [R. Gower](#)

Awards

2019 [NeurIPS](#) travel award, I was awarded a grant from [GDRIA](#) to visit [Samuel Vaiter](#).

Miscellaneous

On my free time I like to play chess ([2200 elo](#)) and to swim (2h a week).