

# Quentin Bertrand

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## 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.

## Awards

- 2019 [NeurIPS](#) travel award
- 2019 [GDRIA](#) travel award

## 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: *Submitted to ICML* (2020)