

# Quentin Berthet

Research Scientist

Google Research  
Brain team, Paris

qberthet@google.com  
q-berthet.github.io

## × Positions

### Google Research

*Brain team, Paris*

- × Research Scientist (since 2019)

### University of Cambridge

*Statistical Laboratory, Department of Pure Mathematics and Mathematical Statistics*

- × Lecturer - equivalent to Assistant Professor (2015-2019)

### California Institute of Technology

*Computing & Mathematical Sciences Department*

- × CMI Postdoctoral fellow - hosted by Venkat Chandrasekaran (2014-2015)

## × Education

### Princeton University (2009-2014)

*O.R.F.E. Department*

- × Ph.D. thesis : Statistical and Computational Tradeoffs in High-dimensional Problems.  
Advisor : Philippe Rigollet.

### Ecole Polytechnique (2006-2009)

### Lycée Louis-le-Grand, Paris (2004-2006)

## × Grants & Awards

- ERC Starting Grant *Computational Trade-offs and Algorithms for Statistics* (2019), 1.48M euro (awarded)
- Isaac Newton Trust Early Career Support Scheme (2016), £9,250
- Best Paper award, Conference on Learning Theory (COLT 2013)
- Bernoulli Society New Researcher Award 2019 (Honorable mention)
- NIPS 2017 Best Reviewer award

## × Editorial activity

- Program Committee for the *Conference on Learning Theory* - COLT 2018, 2020
- Area chair for the *International Conference on Artificial Intelligence and Statistics* - AISTATS 2020
- Area chair for the *International Conference on Machine Learning* - ICML 2020
- Associate Editor of the *Journal of the Royal Statistical Society, B* (since 2018)
- Associate Editor of the *ESAIM Probability and Statistics Journal* (since 2017)

## × Fellowships & visiting positions

- Invited professor, INRIA Paris (2019)
- Alan Turing Institute faculty fellowship (2016-2019)
- Fellow of St John's College, Cambridge (2015-2019)
- Gordon Y.S. Wu Fellowship in Engineering, Princeton University (2009)

## × Publications and preprints

Full list on Google scholar profile:

<http://scholar.google.com/citations?user=bHwGZjcAAAAJ>

1. Estimation of smooth densities in Wasserstein distance  
J. Weed and Q. Berthet  
*COLT 2019*
2. Regularized Contextual Bandits  
X. Fontaine, Q. Berthet, and V. Perchet  
*AISTATS 2019*
3. Statistical Windows in Testing for the Initial Distribution of a Reversible Markov Chain  
Q. Berthet and V. Kanade  
*AISTATS 2019*
4. Unsupervised Embedding Alignment with Wasserstein Procrustes  
A. Joulin, E. Grave and Q. Berthet  
*AISTATS 2019*
5. Detection of Planted Solutions for Flat Satisfiability Problems  
Q. Berthet and J.S. Ellenberg  
*AISTATS 2019*
6. Optimal Link Prediction with Matrix Logistic Regression  
N. Baldin and Q. Berthet  
*Preprint, (2018)*
7. Exact Recovery in the Ising Blockmodel  
Q. Berthet, P. Rigollet, and P. Srivastava  
*Annals of Statistics, 47 (4), 1805-1834 (2019)*
8. Bandit Optimization with Upper-Confidence Frank-Wolfe  
Q. Berthet and V. Perchet  
*NeurIPS 2017 **Spotlight***
9. Average-case Hardness of RIP Certification  
T. Wang, Q. Berthet, and Y. Plan  
*NeurIPS 2016*
10. Resource Allocation for Statistical Estimation  
Q. Berthet and V. Chandrasekaran  
*Proceedings of the IEEE, 104 (1), 111-125, (2016)*
11. Statistical and Computational Trade-offs in Estimation of Sparse Principal Components  
T. Wang, Q. Berthet, and R. J. Samworth  
*Annals of Statistics, 44(5), 1896-1930, (2016)*

12. Optimal Testing for Planted Satisfiability Problems  
Q. Berthet  
*Electronic Journal of Statistics*, 9, 298-317, (2015)
13. Complexity Theoretic Lower Bounds for Sparse PCA  
Q. Berthet and P. Rigollet  
*J. Mach. Learn. Res.*, 30, 1046-1066, (2013) **Best Paper award at COLT 2013**
14. Optimal detection of Sparse Principal Components in High Dimension  
Q. Berthet and P. Rigollet *Annals of Statistics*, 41(4), 1780-1815. (2013)

## × **Supervision**

- N. Baldin, Ph.D. co-supervised with R. Nickl (2015-19)
- M. Ballu, Ph.D. supervisor (since 2018)
- Undergraduate summer research supervisor (2016-18)

## × **Organisation**

- CFE CM Statistics 2019, Session organizer “Optimal transport in statistics” (12/2019)
- AISTATS 2019, Session chair on “Optimization” (04/2019)
- ISMP 2018, Session organizer on “Optimization in Statistical Learning” (07/2018)
- Alan Turing Institute workshops organization (10/2017, 06/2018, 01/2019)
- Statistics Seminar organizer, University of Cambridge (2015-2018)

## × **Invited presentations**

Tutorial or keynote presentation:

- Institut des Hautes Etudes Scientifiques (IHES), *Bures-sur-Yvette*, 03/2016  
Keynote speaker at “Workshop on Computational and Statistical Trade-offs in Learning”
- YES IX Workshop: Statistics and Computational Complexity, *Eindhoven*, 03/2018  
Tutorial speaker, giving three lectures.
- van Dantzig Seminar, *Leiden*, 03/2018

Invited talks in workshops and conferences:

- Monge-Ampère Géométrie Algorithmique days, *Orsay*, 11/2019
- European Statistical Meeting, *Palermo*, 07/2019
- Meetings in Mathematical Statistics, *Fréjus*, 12/2018
- CFE CM Statistics, *Pisa*, 12/2018
- BIRS workshop “Spin Glasses and Related Topics”, *Banff*, 10/2018

- Statistical Physics and Machine Learning Summer school, *Cargese*, 08/2018
- Joint Statistical Meetings, *Vancouver*, 07/2018
- Workshop on Multi-Armed Bandits, Learning Algorithms, *Rotterdam*, 05/2018
- CRM workshop in Combinatorial Statistics, *Montreal*, 04/2018
- Isaac Newton Institute workshop on Statistical Scalability, *Cambridge*, 01/2018
- CIRM Meeting in Mathematical Statistics, *Luminy*, 12/2017
- Simons Institute “Optimization, Statistics, and Uncertainty” workshop, *Berkeley*, 12/2017
- INFORMS Applied Probability Society Conference, *Northwestern University*, 07/2017
- Optimization and Statistical Learning Workshop, *Les Houches*, 03/2017
- Statistical Learning Workshop, *Lancaster*, 03/2017
- ICSA Conference, invited session, *Shanghai*, 12/2016
- Meeting in Mathematical Statistics, *Fréjus*, 12/2016
- IEEE Information Theory Workshop, *Cambridge*, 09/2016
- IMS Asia-Pacific Rim Meeting, *Hong-Kong*, 06/2016
- International Society for Nonparametric Statistics Conference, *Avignon*, 06/2016
- Cambridge INET/Cemmap Econometric Methods Symposium, *Cambridge*, 06/2016
- MFO workshop “Computationally Efficient Inference, Large Data”, *Oberwolfach*, 03/2016
- UCL Workshop on the Theory of Big Data, *London*, 01/2016
- International Symposium for Mathematical Programming, *Pittsburgh*, 07/2015
- MFO workshop “Probabilistic Techniques in Modern Statistics”, *Oberwolfach*, 05/2015
- Fields Institute workshop on Optimization in Big Data, *Toronto*, 02/2015
- CIRM Meeting in Mathematical Statistics, *Luminy*, 12/2014
- Joint Statistical Meetings invited session, *Boston*, 08/2014
- CIRM workshop on “High-dimensional Statistics”, *Luminy*, 12/2012

Invited presentation at department seminars:

- Bocconi, 11/2019
- UCL Gatsby Unit, 05/2019
- Ecole Nationale des Ponts et Chaussées, 03/2019
- INRIA Paris, 02/2019
- ENSAE, 12/2018

- Alan Turing Institute, 11/2018
- University of Oxford, 05/2018
- Ecole Polytechnique Fédérale de Lausanne, 04/2018
- INRIA Lille, 09/2017
- New York University, 04/2016
- London School of Economics, 03/2016
- INRIA Lille, 12/2015
- University of Birmingham, 11/2015
- University of Cambridge, 03/2015
- University of California, Irvine, 03/2015
- University of California, San Diego, 03/2015
- University of Texas, Austin, 03/2015
- Yale University, 11/2014
- University of Wisconsin, Madison, 10/2014
- California Institute of Technology, 05/2014
- University of Maryland, 03/2014
- University of Southern California, 02/2014
- Massachusetts Institute of Technology, 01/2014
- University of Illinois, Urbana-Champaign, 01/2014
- University of California, Davis, 01/2014
- INRIA Paris, 08/2013
- Princeton University, 03/2012