

# Quentin Berthet

Statistical Laboratory  
Centre for Mathematical Sciences  
University of Cambridge  
Wilberforce Road  
Cambridge CB3 0WB

q.berthet@statslab.cam.ac.uk  
www.statslab.cam.ac.uk/~berthet

## Positions

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### University of Cambridge

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

- × Lecturer - equivalent to Assistant Professor (since 2015)
- × CCIMI Lecturer (since 2017)

### The Alan Turing Institute

*London*

- × Turing Fellow (since 2016)

### St John's College

*Cambridge*

- × Teaching fellow (since 2015)

### California Institute of Technology

*Computing & Mathematical Sciences Department*

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

## Education

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### 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)

## Awards & Fellowships

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Isaac Newton Trust Early Career Support Scheme (2016).

CMI Postdoctoral fellow, California Institute of Technology (2014-2015).

Best Paper award, Conference On Learning Theory (2013).

Gordon Y.S. Wu Fellowship in Engineering, Princeton University (2009).

## Publications & Preprints

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### **Bandit Optimization with Upper-Confidence Frank-Wolfe**

Q. Berthet and V. Perchet

*NIPS 2017, to appear,*

### **Exact Recovery in the Ising Blockmodel**

Q. Berthet, P. Rigollet, and P. Srivastava

*Ann. Statist., to appear, 2016*

### **Average-case Hardness of RIP Certification**

T. Wang, Q. Berthet, and Y. Plan

*NIPS 2016,*

### **Detection of Planted Solutions for Flat Satisfiability Problems**

Q. Berthet and J.S. Ellenberg

*Preprint, 2015*

### **Resource Allocation for Statistical Estimation**

Q. Berthet and V. Chandrasekaran

*Proc. IEEE, 104 (1), 111-125, 2016*

### **Statistical and Computational Trade-offs in Estimation of Sparse Principal Components**

T. Wang, Q. Berthet, and R. J. Samworth

*Ann. Statist., 44(5), 1896-1930, 2016*

### **Optimal Testing for Planted Satisfiability Problems**

Q. Berthet

*Electron. J. Stat., 9, 298-317, 2015*

### **Complexity Theoretic Lower Bounds for Sparse Principal Component Analysis**

Q. Berthet and P. Rigollet

*J. Mach. Learn. Res. W&CP, 30, 1046-1066, Best Paper award at COLT 2013*

### **Optimal detection of Sparse Principal Components in High Dimension**

Q. Berthet and P. Rigollet

*Ann. Statist., 41(4), 1780-1815., 2013*

## Invited talks and presentations

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× Invited talks in workshops and conferences

INFORMS Applied Probability Society Conference, *Northwestern U.*, 07/2017.

Optimization and Statistical Learning Workshop, *Les Houches*, 03/2017.

Statistical Learning Workshop, *Lancaster*, 03/2017.

ICSA Conference, *Shanghai*, 12/2016.

Meeting in Mathematical Statistics, *Frejus*, 12/2016.

Information Theory Workshop, IEEE, *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.  
Workshop on Computational and Statistical Trade-offs in Learning, *IHES*, 03/2016.  
Computationally Efficient Inference for Complex Large-scale Data, *Oberwolfach*, 03/2016.  
UCL Workshop on the Theory of Big Data, *London*, 01/2016.  
International Symposium for Mathematical Programming, *Pittsburgh*, 07/2015.  
Probabilistic Techniques in Modern Statistics, *Oberwolfach*, 05/2015.  
Workshop on Optimization in Big Data, *Fields Institute, Toronto*, 02/2015.  
Meeting in Mathematical Statistics, *CIRM, Luminy*, 12/2014.  
Joint Statistical Meetings, *Boston*, 08/2014.  
Conference on Learning Theory, *Princeton University*, 06/2013. **Best Paper award**  
High-dimensional Statistics Workshop, *CIRM, Luminy*, 12/2012.

× Presentations in department seminars:

Oxford, NYU Courant, London School of Economics, INRIA Lille, U. of Birmingham,  
Cambridge, U.C. Irvine, U.C. San Diego, U.T. Austin, Yale, U. of Wisconsin, Caltech, MIT,  
USC, U. of Illinois U-C, UC Davis, INRIA Paris.

## Editorial activity

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- × Program Committee for the Conference on Learning Theory (COLT) 2018
- × Program Committee for the European Meeting of the Econometric Society (ESEM) 2017
- × Reviews for the following journals and conferences:
  - Annals of Statistics
  - Annals of Applied Probability
  - Probability Theory and Related Fields
  - Bernoulli Journal
  - Electronic Journal of Statistics
  - IEEE Transactions on Information Theory
  - IEEE Transactions on Network Science and Engineering
  - Journal of the Royal Statistical Society
  - Journal of Machine Learning Research
  - Journal of Multivariate Analysis
  - Mathematical Programming
  - Statistics and Computing
  - Artificial Intelligence and Statistics Conference (AISTATS)
  - Conference on Learning Theory (COLT)

Neural Information Processing Systems (NIPS)  
Symposium on Foundations of Computer Science (FOCS)

## Teaching

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### **Lecturing:**

Topics in Statistical Theory (Part III, Lent 2016)  
Optimisation (Part I, Easter 2016, 2018)  
Principles of Statistics (Part II, Michaelmas 2016, 2017)  
*University of Cambridge*

### **Supervisions:**

Courses in Mathematics (since 2015)  
*St John's College*

### **Teaching Assistant:**

Classes on Probability Theory, Optimization, Theoretical and Applied Statistics.  
*Princeton University* (2010-2013).

### **Examiner:**

Weekly oral examination in Mathematics, Preparatory Program  
*Lycée Louis-Le-Grand* (2007-2008).

## Administrative duties

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Organisation of the Statistics Seminar (2015-2018)  
Admissions committee for Part III  
Examination committee for Part IA (2015-2016) and Part II (2016-2017)

## Student activities

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Graduate Student Government, Princeton University (2013-2014)  
Fencing team, Ecole Polytechnique (2007-2009)  
Amateur Go Player (8 kyu) - Special prize at the 2012 New Jersey Go Open.