

Quentin Berthet

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Positions

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

- × Fellow (since 2015)

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)

Awards

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

NIPS 2017 Best Reviewer award.

Bernoulli Society New Researcher Award 2019 (Honorable mention)

Publications & Preprints

Optimal Link Prediction with Matrix Logistic Regression

N. Baldin and Q. Berthet

Preprint, 2018

Testing for the Initial Distribution of a Markov Chain

Q. Berthet and V. Kanade

Preprint, 2018

Unsupervised Embedding Alignment with Wasserstein Procrustes

A. Joulin, E. Grave and Q. Berthet

Preprint, 2018

Bandit Optimization with Upper-Confidence Frank-Wolfe

Q. Berthet and V. Perchet

Advances in Neural Information Processing Systems (NIPS), 2017, **Spotlight**

Exact Recovery in the Ising Blockmodel

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

Annals of Statistics, to appear, 2016

Average-case Hardness of RIP Certification

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

Advances in Neural Information Processing Systems (NIPS), 2016

Detection of Planted Solutions for Flat Satisfiability Problems

Q. Berthet and J.S. Ellenberg

Submitted to IEEE Transactions on Information Theory, 2015

Resource Allocation for Statistical Estimation

Q. Berthet and V. Chandrasekaran

Proceedings of the IEEE, 104 (1), 111-125, 2016

Statistical and Computational Trade-offs in Estimation of Sparse PC

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

Annals of Statistics, 44(5), 1896-1930, 2016

Optimal Testing for Planted Satisfiability Problems

Q. Berthet

Electronic Journal of Statistics, 9, 298-317, 2015

Complexity Theoretic Lower Bounds for Sparse PCA

Q. Berthet and P. Rigollet

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

Optimal detection of Sparse Principal Components in High Dimension

Q. Berthet and P. Rigollet

Annals of Statistics, 41(4), 1780-1815., 2013

Invited talks and presentations

✕ Tutorial and keynote invited talks

van Dantzig Seminar, *Leiden*, 03/2018.

YES IX workshop (three tutorial talks) - EURANDOM, *Eindhoven*, 03/2018.

Workshop on Computational and Statistical Trade-offs in Learning, *IHES*, 03/2016.

✕ Invited talks in workshops and conferences

European Statistical Meeting, *Palermo*, upcoming, 07/2019.

Statistical Physics and Machine Learning Summer school, *Cargese*, upcoming, 08/2018.

Joint Statistical Meetings, *Vancouver*, 07/2018.

Workshop on Multi-Armed Bandits, Learning Algorithms, *Rotterdam*, 05/2018.

Workshop in Combinatorial Statistics - CRM, *Montreal*, 04/2018.

Statistical Scability, Isaac Newton Institute, *Cambridge*, 01/2018.

Meeting in Mathematical Statistics, *Luminy*, 12/2017.

NIPS 2017 Conference, *Long Beach*, 12/2017. **Spotlight presentation**

Optimization, Statistics, and Uncertainty workshop - Simons Institute, *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, *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.

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

Fellowships & Grants

Named research partner, Natural Environment Research Council *£800k* grant on “Revealing the interactions between global biodiversity change and food security” (2018) .

Isaac Newton Trust Early Career Support Scheme (2016), *£9,250*

Alan Turing Institute faculty fellowship (since 2016), *20% FTE*

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

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

Editorial activity

× Program Committee for the Conference on Learning Theory (COLT) 2018

× Associate Editor of the ESAIM Probability and Statistics Journal (since 2017)

× 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)

International Conference on Machine Learning (ICML)

Neural Information Processing Systems (NIPS)

Symposium on Foundations of Computer Science (FOCS)

Symposium on the Theory of Computer Science (STOC)

Organisation

Online learning workshop, funded by the Alan Turing Institute, 09/2017, 06/2018

Session on “Optimization for Statistical Learning” ISMP 2018.

Small Groups Research Award, funded by the Alan Turing Institute, 02/2018

Organisation of the Cambridge Statistics Seminar, 2015-2018

Teaching

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

St John's College (since 2015)

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).

Distractions

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.

Very amateur running, cycling, skiing, and hiking.