Thibaut Le Gouic

Maître de conférence (Associate Professor)

thibaut.le_gouic@math.cnrs.fr
thibautlg.github.io

French citizen, born in 1987, in Saint-Pierre (974), France

Academic Employment

Sept 2014 –	**Maître de conférence (Associate Professor)**
	Ecole Centrale de Marseille, Marseille
2013–2014	**ATER (1-year contract assistant professor)**
	École centrale de Marseille, Marseille
2010–2013	**Moniteur (Teaching assistant)**
	Université Paul Sabatier, Toulouse

Education

2010–2013	**PhD**
	Université Paul Sabatier, Toulouse
	Title: *Mass localization and Wasserstein spaces*
	Advisor: *Philippe Berthet*
2008–2010	**Master de Mathématiques**
	Université Paul Sabatier, Toulouse
	Mémoire: *Quantization and measure transportation for clustering in Banach spaces*
2005–2008	**Licence de Mathématiques**
	Université Paul Sabatier, Toulouse

Visiting positions

2019–2021	**Détachement**
	Two years invited associate professor at the Department of Mathematics of the Massachusetts Institute of Technology, Cambridge (USA)
2018–2019	**Détachement**
	One year contract of research at the Higher School of Economics, Moscow (Russia)
2017–2018	**Délégation CNRS**
	Six months research sabbatical awarded by the CNRS (France)

Scientific activities

Aug-Nov 2021	**Workshop on Geometric Methods in Optimization and Sampling**
	Simons Institute for the Theory of Computing, Berkeley (USA)
Jun 2019	**Short term visit with Philippe Rigollet (MIT)**
	Institute of Advanced Study, Princeton (USA)
Feb 2019	**Short term visit with Philippe Rigollet (MIT)**
	Institute of Advanced Study, Princeton (USA)
Oct 2017-Mar 2018	**Five months research visit at the Higher School of Economics**
	Moscow (Russia)
Sept 2016-July 2017	**Responsible of the seminar of statistics**
	Institut de Mathématiques de Marseille
Oct 2016	**Two weeks research visit at the Higher School of Economics**
	Moscow (Russia)
May 2016	**Selection committee**
	for an assistant professor position at the École Centrale de Casablanca (Morocco)
Jan-Jun 2013	**Organisation of a PhD student workshop**
	Institut de Mathématiques de Toulouse
Oct 2012	**Organisation of the welcoming day for new PhD students in probability and statistics**
	Institut de Mathématiques de Toulouse
Oct 2012	**Organisation of mini-courses between PhD students**
	Institut de Mathématiques de Toulouse
Mars et Nov 2012	**Participations at the Hippocampe program: the scientific world for high school students**
	Institut de Recherche pour l'Enseignement des Mathématiques de Toulouse

Talks at conferences and seminars

Mar 2023	**Séminaire de Probabilités et Statistique** IMAG, Université de Montpellier
Jan 2023	**Workshop on Interpolation of Probability Measures** Lagrange Mathematics and Computation Research Center, Paris
Oct 2022	**Séminaire** Université de Toulon
Jun 2022	**Research school: Divergences statistiques et géométriques pour l'apprentissage machine** Centre Henri Lebesgue, Rennes
Jun 2022	**Journées Statistiques du Sud** Avignon
Apr 2022	**Stochastics and Statistics Seminar** IDSS, Massachusetts Institute of Technology (USA)
Dec 2021	**Seminar of Statistics** ENSAI, Rennes
Oct 2020	**Applied Mathematics and Computation Seminar** Amherst University, Amherst MA (USA)
Oct 2019	**Lecture at seminar course on Optimal Transport** Yale University, New Haven CT (USA)
Sept 2019	**Workshop "Recent advances in mass transportation"** Poncelet Center and Higher School of Economics, Moscow (Russia)
Jul 2018	**Mini-course at Conference on Statistical Optimal Transport** Skoltech, Moscow (Russia)
Nov 2018	**Seminar of Probability and Statistics** Université Paris Sud, Orsay (France)
Dec 2017	**Invited Session, CFE-CMStatistics meeting** University of London, London (UK)
Jul 2017	**Journées IOPS - Image, Optimisation, Probabilités et Statistique** Institut de Mathématiques de Bordeaux, Bordeaux
Dec 2016	**Latin American Congress of Probability and Mathematical Statistics (CLAPEM)** San José (Costa Rica)
Oct 2016	**Talk on Wasserstein barycenter** Faculty of Mathematics, Higher School of Economics, Moscow (Russia)
Oct 2015	**2nd conference on Geometric Science of Information** Ecole Polytechnique, Paris-Saclay
Jun 2015	**Meeting on statistics Avignon-Marseille** Université d'Avignon, Avignon
Sept 2014	**Seminar of probabilities and statistics** I3M, Montpellier
Feb 2014	**Seminar of statistics** LAREMA, Angers
Jan 2014	**Workshop on PDE/Probability** LATP, Marseilles
Nov 2013	**Seminar of probabilities** IMT, Toulouse
Aou 2013	**Rencontres des jeunes statisticiens** Centre Paul Langevin, Aussois
Juin 2012	**Sexto encuentro of Estadística Matemática BoSanTouVal** CIEM, Castro Urdiales (Spain)

PUBLICATIONS AND PREPRINTS

Publications

[1] T. Le Gouic. "Recovering Metric from Full Ordinal Information". In: *Discrete & Computational Geometry (to appear)* (2023).

[2] T. Maunu, T. L. Gouic, and P. Rigollet. "Bures-Wasserstein Barycenters and Low-Rank Matrix Recovery". In: *AISTATS* (2023).

[3] S. Chewi, P. R. Gerber, C. Lu, T. Le Gouic, and P. Rigollet. "The query complexity of sampling from strongly log-concave distributions in one dimension". In: *Conference on Learning Theory*. PMLR. 2022, pp. 2041–2059.

[4] T. Le Gouic, Q. Paris, P. Rigollet, and A. J. Stromme. "Fast Convergence of Empirical Barycenters in Alexandrov Spaces and the Wasserstein Space". In: *Journal of the European Mathematical Society* (2022).

[5] V. Perchet, P. Rigollet, and T. Le Gouic. "An algorithmic solution to the Blotto game using multi-marginal couplings". In: *Proceedings of the 23rd ACM Conference on Economics and Computation*. 2022, pp. 208–209.

[6] S. Chewi, J. Clancy, T. Le Gouic, P. Rigollet, G. Stepaniants, and A. J. Stromme. "Fast and Smooth Interpolation on Wasserstein Space". In: *AISTAT* (2021).

[7] S. Chewi, C. Lu, K. Ahn, X. Cheng, T. Le Gouic, and P. Rigollet. "Optimal dimension dependence of the metropolis-adjusted langevin algorithm". In: *Conference on Learning Theory*. PMLR. 2021, pp. 1260–1300.

[8] S. Chewi, T. Le Gouic, C. Lu, T. Maunu, and P. Rigollet. "SVGD as a Kernelized Wasserstein Gradient Flow of the Chi-Squared Divergence". In: *NeurIPS 2020* (2020).

[9] S. Chewi, T. Le Gouic, C. Lu, T. Maunu, P. Rigollet, and A. Stromme. "Exponential Ergodicity of Mirror-Langevin Diffusions". In: *NeurIPS 2020* (2020).

[10] T. Le Gouic. "A Note on Flatness of Non Separable Tangent Cone at a Barycenter". In: *Comptes Rendus. Mathématique* 358.4 (2020), pp. 489–495.

[11] A. Ahidar-Coutrix, T. Le Gouic, and Q. Paris. "Convergence Rates for Empirical Barycenters in Metric Spaces: Curvature, Convexity and Extendable Geodesics". In: *Probability Theory and Related Fields* (2019), pp. 1–46.

[12] E. Arias-Castro and T. Le Gouic. "Unconstrained and Curvature-Constrained Shortest-Path Distances and Their Approximation". In: *Discrete & Computational Geometry* 62.1 (2019), pp. 1–28.

[13] T. Le Gouic and Q. Paris. "A Notion of Stability for K-Means Clustering". In: *Electronic journal of statistics* 12.2 (2018), pp. 4239–4263.

[14] T. Le Gouic and J.-M. Loubes. "Existence and Consistency of Wasserstein Barycenters". In: *Probability Theory and Related Fields* 168.3-4 (2017), pp. 901–917.

[15] E. Boissard, T. Le Gouic, and J.-M. Loubes. "Distribution's Template Estimate with Wasserstein Metrics". In: *Bernoulli* 21.2 (2015), pp. 740–759.

[16] T. Le Gouic and J.-M. Loubes. "Barycenter in Wasserstein Spaces: Existence and Consistency". In: *International Conference on Geometric Science of Information.* Springer, 2015, pp. 104–108.

[17] E. Boissard and T. Le Gouic. "On the Mean Speed of Convergence of Empirical and Occupation Measures in Wasserstein Distance". In: *Annales de l'IHP Probabilités et Statistiques.* Vol. 50. 2014, pp. 539–563.

Preprints

[1] T. Le Gouic, J.-M. Loubes, and P. Rigollet. *Projection to Fairness in Statistical Learning.* June 25, 2020. arXiv: 2005.11720.

Teaching

2017–2018 | **96h service**

- courses in probability theory (L3)
- courses in statistical learning (M2)
- project tutoring

2016–2017 | **250h service**

- courses in probability theory (L3)
- courses in statistical learning (M2)
- courses in statistics (M1)
- refresher course in probability theory to École Préparatoire teachers in Casablanca
- project tutoring

2015–2016 | **314h service**

- courses in probability theory (L3,M1)
- courses in statistical learning (M2)
- courses in statistics (M1)
- project tutoring

2014–2015 | **225h service**

- courses in probability theory (L3,M1)
- courses in statistical learning (M2)
- courses in statistics (M1)
- project tutoring

2013–2014 | **192h service**

- courses in probability theory (L3,M1)
- courses in statistics (M1)
- project tutoring