

Thibaut Le Gouic

Maître de conférence (Associate Professor)

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[thibautlg.github.io](https://github.com/thibautlg)

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: <i>Mass localization and Wasserstein spaces</i> Advisor: <i>Philippe Berthet</i>
2008–2010	Master de Mathématiques Université Paul Sabatier, Toulouse Mémoire: <i>Quantization and measure transportation for clustering in Banach spaces</i>
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 <i>Institut de Mathématiques de Marseille</i>
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 <i>Institut de Mathématiques de Toulouse</i>
Oct 2012	Organisation of the welcoming day for new PhD students in probability and statistics <i>Institut de Mathématiques de Toulouse</i>
Oct 2012	Organisation of mini-courses between PhD students <i>Institut de Mathématiques de Toulouse</i>
Mars et Nov 2012	Participations at the Hippocampe program: the scientific world for high school students <i>Institut de Recherche pour l'Enseignement des Mathématiques de Toulouse</i>

Talks at conferences and seminars

- 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](https://arxiv.org/abs/2005.11720).

TEACHING

2017–2018	96h service <ul style="list-style-type: none">• courses in probability theory (L3)• courses in statistical learning (M2)• project tutoring service
2016–2017	250h service <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• courses in probability theory (L3,M1)• courses in statistical learning (M2)• courses in statistics (M1)• project tutoring
2014–2015	225h service <ul style="list-style-type: none">• courses in probability theory (L3,M1)• courses in statistical learning (M2)• courses in statistics (M1)• project tutoring
2013–2014	192h service <ul style="list-style-type: none">• courses in probability theory (L3,M1)• courses in statistics (M1)• project tutoring