LUCA GANASSALI

luca.ganassali@universite-paris-saclay.fr ⋄ Personal webpage ⋄ Google Scholar ⋄ Linkedin

Assistant professor (Maître de conférences) in Statistics, Université Paris-Saclay

RESEARCH POSITIONS

Maître de Conférences	Jan. 2024 -
Université Paris-Saclay, Laboratoire de Mathématiques d'Orsay	*Orsay, France*

Postdoctoral Researcher	Oct. 2022 - Nov. 2023
EPFL	*Lausanne, Switzerland*

Chair of Business Analytics (BAN), led by Pr. Negar Kiyavash

EDUCATION

Ph.D. in Machine Learning and Statistics	Oct. 2019 - Sept. 2022
Inria, DI/ENS, PSL Research University	*Paris, France*

The graph alignment problem: fundamental limits and efficient algorithms. Advisors: Pr. Laurent Massoulié, Pr. Marc Lelarge. Funded by Prairie Institute.

MsC (Master 2) Probability and Statistics	2018-2019
Université Paris-Sud	*Orsay, France*

Inference on graphs, random walks and graphs, stochastic calculus and brownian motion, concentration of measure. Mention 'Très Bien' (summa cum laude).

École Polytechnique	2015-2019
Engineer degree	*Palaiseau, France*

Applied mathematics (probability, statistics), computer science, physics, economics. Overall GPA: 3.92/4.

Preparatory classes, MPSI/MP*	2013-2015
Lycée Henri IV	*Paris, France*

Admitted to École Polytechnique after nationwide exam.

TEACHING

Courses at Univ. Paris-Saclay	2024-
Univ. Paris-Saclay	*Orsay, France*

· 2023-2024 (équiv. 150h) – L3 Magistère : Théorie de la mesure (TD), M1 Mathématiques fondamentales : Statistiques (TD).
· 2024-2025 (150h) – M1 Maths&IA : Modélisation Statistique, première partie (cours et TD). L3 Magistère : Théorie de la mesure (TD), M1 Mathématiques fondamentales : Statistiques (cours et TD).

Lecturer, Data driven business analytics	Spring 2023
EPFL	*Lausanne, Switzerland*

Bachelor 3rd year.

TA, Statistics and Probability	2021-2022
Université de Paris	*Paris, France*

· Spring 2022, Spring 2021: *Statistics (MA1BY020)*, master's degree (1st year).
· Fall 2021: *Probability (MT15Y030)*, bachelor's degree (3rd year).
· Spring 2021: *Statistics and numerical simulations (MA16Y020)*, bachelor's degree (3rd year).

Tutoring for the probability course (MAP361) at Ecole Polytechnique.

PUBLICATIONS (JOURNALS, CONFERENCES)

[C6]   M. Even, L. Ganassali, J. Maier, L. Massoulié. Aligning Embeddings and Geometric Random Graphs: Informational Results and Computational Approaches for the Procrustes-Wasserstein Problem, 2024, *NeurIPS 2024.* [paper]

[C5]   F. Jamshidi, L. Ganassali, N. Kiyavash. On sample complexity of conditional independence testing with Von Mises estimator with application to causal discovery, 2023, *ICML 2024.* [paper]

[J3]   L. Ganassali, L. Massoulié, G. Semerjian. Statistical limits of correlation detection in trees, 2022, *Advances in Applied probability.* [paper]

[J2]   L. Ganassali, M. Lelarge, L. Massoulié. Correlation detection in trees for partial graph alignment, 2021, *full paper, improved version of* [C4]*, in Advances in Applied Probability.* [paper]

[C4]   L. Ganassali, M. Lelarge, L. Massoulié. Correlation detection in trees for planted graph alignment, 2021, *extended abstract at Innovations in Theoretical Computer Science (ITCS 2022).* [extended abstract]

[C3]   L. Ganassali, M. Lelarge, L. Massoulié. Impossibility of Partial Recovery in the Graph Alignment Problem, 2021, in *Proceedings of Thirty Fourth Conference on Learning Theory (COLT 2021).* [paper]

[C2]   L. Ganassali. Sharp threshold for alignment of graph databases with Gaussian weights, 2020, *Mathematical and Scientific Machine Learning (MSML21).* [paper]

[C1]   L. Ganassali, L. Massoulié. From tree matching to sparse graph alignment, 2020, in *Proceedings of Thirty Third Conference on Learning Theory (COLT 2020).* [paper]

[J1]   L. Ganassali, M. Lelarge, L. Massoulié. Spectral alignment of correlated Gaussian random matrices, 2019, in *Advances in Applied Probability.* [paper]

WORKSHOP PAPERS, PREPRINTS

[P3]   Learning causal graphs via monotone triangular transport maps, 2023, *NeurIPS 2023 Workshop on Optimal Transport and Machine Learning.* [preprint]

[P2]   E. Daoud, L. Ganassali, M. Lelarge, F. Reyal. SiMCa: Sinkhorn Matrix Factorization with Capacity Constraints, 2021, *preprint.* [preprint]

[P1]   M. Akian, L. Ganassali, S. Gaubert, L. Massoulié. Probabilistic and mean-field model of COVID-19 epidemics with user mobility and contact tracing, 2020, *preprint.* [preprint]

PHD MANUSCRIPT

L. Ganassali. The graph alignment problem: fundamental limits and efficient algorithms, *PhD dissertation*, 2022. [pdf]

TALKS, SEMINARS AND WORKSHOPS

– June 7th, 2024. *Présentation lors de la visite Insmi (CNRS)*, Orsay.

– Apr. 3rd, 2024. *9th Statistics & Computer Science Day for Data Science in Paris-Saclay, IHES.* (talk).

– Feb. 28th, 2024. *Séminaire de Modélisation Stochastique, LPSM*, Paris. (talk).

- Feb. 20th, 2024. *3rd ASCAI Workshop*, Postdam. (talk).

- June 28-30, 2023. *21st INFORMS Applied Probability Society Conference*, Nancy. (talk).

- Mar. 27-31, 2023. *Young European Probabilists (YEP) workshop*, Eindhoven. (talk).

- Jan. 12, 2023. *Séminaire de Probabilités/Statistiques*, Institut de mathématique d'Orsay, Orsay. (talk).

- Nov. 15, 2022. *Séminaire de Probabilités*, Centre de Mathématiques et Informatique, Université d'Aix-Marseille, Marseille. (talk).

- May 23-27, 2022. *Theoretical Computer Science Spring School: Machine Learning*, CIRM, Marseille (poster).

- Mar. 17, 2022. *CDM Seminar*, EPFL (talk).

- Feb. 28-Mar. 1, 2022. *DACO Seminar*, ETH Zürich (talk).

- Jan. 31-Feb. 3, 2022. *Innovations in Theoretical Computer Science (ITCS)*, Berkeley (talk).

- Dec. 9, 2021. *Stochastics Seminar*, Georgia Tech (talk).

- Nov. 10, 2021: *Prairie Workshop*, Paris (poster).

- Oct. 25 – 29, 2021: *Colloquium "Jeunes Probabilistes et Statisticiens"*, St-Pierre d'Oléron (talk).

- Sept. 27 – Oct. 1, 2021: *Workshop "On Future Synergies for Stochastic and Learning Algorithms"*, Marseille (poster).

- Sept. 6 – 10, 2021: *Junior conference "Random networks and interacting particle systems"*, virtual (talk).

- Aug. 16 – 19, 2021: *Mathematical and Scientific Machine Learning (MSML)*, EPFL (talk).

- Aug. 15 – 19, 2021: *Conference on Learning Theory (COLT)*, virtual (talk + poster).

- July 9 – 12, 2020: *Conference on Learning Theory (COLT)*, virtual (talk).

- June 25, 2020: *Dyogene team seminar*, Inria, Paris (talk).

- January 13-17, 2020: *Workshop "Spectra, Algorithms and Random Walks on Random Networks"*, Marseille.

- Oct. 23, 2019: *Networking days*, Orsay (talk).

SERVICE

Reasearch seminars

2020-2022: Organizer of the Argo seminar at Inria.

2022-2023: Co-organizer of the team seminar in BAN chair.

2024-...: Co-organizer of the SuperGrandMa seminar at Orsay.

2024-...: Organizer of the *Séminaire de culture mathématique* for 3rd year Bachelor students at Orsay.

Reviewing

Conferences: ISIT 21, COLT 22, MSML 22, COLT 23, UAI 23,...

Journals: Journal of Machine Learning Research, Annals of Statistics, Annals of Probability, Annals of Applied Probability, IEEE Transactions on Information Theory, Foundations of Computational Mathematics, IEEE Journal on Selected Areas in Information Theory.

AWARDS

Prix de la chaire Modélisation et Biodiversité, 2018: Research Internship award from the chair 'Mathematical modelling and Biodiversity' (Ecole Polytechnique).

LANGUAGES

French (native), **English** (fluent, TOEIC : 990/990), **Italian** (fluent).