

# Nathan Noiry

Telecom Paris - Postdoctoral Researcher

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## Education

- 2020-2021 **Postdoctoral Researcher, S2A Team (Signal, Statistics and Learning), Telecom Paris.**  
Subjects: Machine learning, Deep Learning, Transfer Learning, Correction of Bias, Fairness.
- 2020-2021 **Researcher in the data scientists residence program, datacraft.**
- 2017-2020 **PhD in Mathematics, Modal'X, Université Paris Nanterre.**  
Advisors: Nathanaël Enriquez and Laurent Ménard.  
Title: Random Matrices and Random Graphs.
- 2016 **Master in Probability, ENS Lyon.**
- 2013 **Admission to ENS Lyon, Élève fonctionnaire stagiaire from 2013 to 2017.**

## Publications and Preprints

- 2021 **Online Matching in Sparse Random Graphs, Preprint.**  
With Vianney Perchet and Flore Sentenac.
- 2021 **Learning from Biased Data: A Semi-Parametric Approach, ICML.**  
With Patrice Bertail, Stephan Cléménçon and Yannick Guyonvarch.
- 2021 **Learning to Rank Anomalies, accepted for LIDTA.**  
with Stephan Cléménçon and Myrto Limnios.
- 2020 **Large deviations for spectral measures of some spiked matrices, Preprint.**  
With Alain Rouault.
- 2020 **A solvable class of renewal processes and its applications, ECP.**  
With Nathanaël Enriquez.
- 2019 **Depth First Exploration of a Configuration Model, Preprint.**  
With Nathanaël Enriquez, Gabriel Faraud and Laurent Ménard.
- 2019 **Spectral measures of spiked random matrices, JOTP.**
- 2018 **Spectral asymptotic expansion of Wishart matrices with exploding moments, ALEA.**

## Teaching Experience

- 2020-2021 **Supervision of a group of students in internship at Sicara.**  
Masters Big Data and Artificial Intelligence, Télécom Paris.  
Subjects: Computer Vision, Detection of edges, Detection of keypoints...
- 2020-2021 **Supervision of a group of students in internship at Air Liquide.**  
Masters Big Data and Artificial Intelligence, Télécom Paris.  
Subject: Causal Machine Learning and Counterfactual Analysis for medical applications.
- 2020-2021 **Machine Learning Practical Sessions with Python.**  
Masters Big Data and Artificial Intelligence, Télécom Paris.  
Among others:  $k$ -NN, LDA, Logistic Regression, SVM, Boosting, Random Forests, NMF...
- 2019-2020 **Statistical Methods Tutorials.**  
Bachelor in Mathematics and Economics, Paris Nanterre.  
Among others: descriptive statistics, hypothesis testing...

2017-2019 **Algebra, Analysis and Optimization Tutorials.**  
Bachelor in Mathematics and Economics, Paris Nanterre.  
*Among others: algebraic structures, multivariate calculus, Lagrange's method...*

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## Organization duties

- 2017-2019 **Co-organization of the DSAIDIS (Data Science and Artificial Intelligence for Digitalized Industry and Services) conference.**  
Meetup between academic researchers and industrial partners of Télécom Paris.
- 2017-2020 **Organization of the morning session of the monthly seminar MEGA (Matrices Et Graphes Aléatoires) at Institut Henri Poincaré..**  
Meetup between academic researchers in the fields of random matrices and random graphs.
- 2016-2017 **Co-organization of a students lecture group on the book *Combinatorics and Random Matrix Theory* (Baik, Deift Suidan).**

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## Other activities

- 2021 **Scientific consulting.**  
Statistical analysis of a medical survey commissioned by Seintinelles.

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## Selected Talks and Posters

- 07/2021 **International Conference on Machine Learning.**
- 07/2021 **Workshop Data Bias: Symptoms, Diagnosis and Remedies, datacraft.**
- 02/2021 **Séminaire de statistiques et machine learning du département IDS, Télécom Paris.**
- 10/2019 **Séminaire de probabilités de Versailles.**
- 09/2019 **Conference Rouen Probability Meeting.**
- 04/2019 **Conference Random Matrices and Random Graphs, CIRM.**
- 03/2019 **Séminaire de probabilités de Modal'X, Université de Paris Nanterre.**
- 05/2018 **Conference 'Les probabilités de demain', IHP.**

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## Selected conferences and seminars

- 07/2019 Saint-Flour summer school
- 04/2019 Conference *Random Matrices and Random Graphs*, CIRM
- 03/2019 Workshop *Point processes and unimodular random graphs*, INRIA
- 11/2018 Seminar *Itzykson*, IHES
- 11/2018 Workshop *Brown Measure and Non-Normal Random Matrices*, Toulouse
- 10/2018 Workshop *Random Graphs and Its Applications for Networks*, Saint-Étienne
- 06/2018 Summer school *Random Matrix Theory*, University of Michigan
- 05/2018 Stochastic Geometry Days, Paris
- 10/2017 Conference *Dynamics on Random Graphs and Random Maps*, CIRM
- 07/2017 Summer school *Spectral properties of large random objects*, IHES
- 01/2017 Winter school *Combinatorics and Interactions*, CIRM

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## Skills

- Languages French, English.
- Other Python (numpy, pandas, scikit-learn, pytorch...), MAPLE, Git,  $\LaTeX$ .