Solenne Gaucher

Ph.D. in Statistics

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Education

2018 – 2022 **Ph.D. in Statistics**, *Université Paris-Saclay*, France.
Ph.D. in Statistics on bandit problems and link prediction on graphs, under the supervision of Christophe Giraud and Olga Klopp.
Main field of expertise : bandit algorithms, network analysis, high dimensional statistics, algorithmic fairness.

2017 – 2018 **Master of Science in Mathematics**, *Université Paris-Saclay*, France.
Probability and Statistics track.

2014 – 2018 **Bachelor of Science**, *École Polytechnique*, France.
Multidisciplinary B.S. – with a focus on Applied Mathematics and Computer Science (Data Science track).

Work Experience

Sept. 2020 to Feb. 2021 **Research Engineer**, *Électricité de France*, France.
Developed a transfer learning method for adaptively forecasting electricity load during the first Covid lockdown. Improved existing methods for wind power prediction.

Sept. 2018 to June 2020 **Teaching Assistant**, *École Nationale de la Statistique et de l'Administration Économique*, France.
Lead problem sessions and designed problem sets for the courses "Refresher on Statistics", "Refresher on Machine Learning", "Statistics", and "Introduction to Machine Learning" (at Master's level).

April to July 2018 **Research Intern**, *École Nationale de la Statistique et de l'Administration Économique*, France.
Established minimax optimality of the maximum likelihood estimator in sparse network with missing observation, under the supervision of Olga Klopp.

April to July 2017 **Research Intern**, *Department of Statistics, Oxford University*, United Kingdom.
Developed a multi-scale, Bayesian, non-parametric approach for testing for dependance, under the supervision of Chris Holmes and Sarah Filippi.

June to August 2016 **Sofware Development Trainee**, *Médiactif*, France.
Analysed trajectories of pedestrians obtained from geolocalisation data in order to improve a crowd motion simulator (using Python and C++).

Skills

Computer **R**, **Python**, knowledge of **C++**, **SQL**, **Matlab**.

Languages **English** (IELTS 8), **French** (native), **German** (intermediate, french-german high school diploma).

Publications and preprints

2022 **Fair learning with Wasserstein barycenters for non-decomposable performance measures**, S. Gaucher, N. Schreuder and E. Chzhen, *Arxiv Preprints*.

2022 **The price of unfairness in linear bandits with biased feedback**, S. Gaucher, A. Carpentier and C. Giraud, *Arxiv Preprints*.

2021 **Hierarchical transfer learning with applications for electricity load forecasting**, A. Antoniadis, S. Gaucher and Y. Goude, *Arxiv Preprints*.

2021 **Optimality of variational estimation in the stochastic block model with missing links**, S. Gaucher and O. Klopp, *NeuRIPs 2021*.

2021 **Outliers detection in networks with missing links**, S. Gaucher, O. Klopp, and G. Robin, *Computational Statistics & Data Analysis*.

2021 **Maximum likelihood estimation of sparse networks with missing observations**, S. Gaucher and O. Klopp, *Journal of Statistical Planning and Inference*.

2020 **Finite continuum-armed bandits**, S. Gaucher, *NeuRIPs 2020*.

Talks and Posters

May 2022 **Re-thinking High-dimensional Mathematical Statistics – Mathematisches Forschungsinstitut Oberwolfach**, Workshop, *The price of unfairness in linear bandits with biased feedback*.

March 2022 **Laboratoire de Mathématiques d'Orsay**, Celeste Seminar, *The price of unfairness in linear bandits with biased feedback*.

Dec 2021 **NeurIPS 2021**, Poster Session, *Variational estimation in the stochastic block model with missing links*.

Nov. 2021 **Institut für Mathematik, Universität Potsdam**, Bandit Seminar, *Introduction to the continuum-armed bandit problem with an extension to the finite setting*.

Oct. 2021 **Toulouse School of Economics**, MADSTAT Seminar, *Robust estimation in network with missing links*.

July 2021 **DSSV-ECDA**, Conference, *Outlier detection in networks with missing links*.

June 2021 **Séminaire Palaisien**, Université Paris-Saclay and Institut Polytechnique de Paris joint seminar on Statistics and Machine Learning, *Continuum-armed bandits : from the classical setting to the finite setting*.

March 2021 **École Nationale de la Statistique et de l'Administration Économique**, Statistics and Machine Learning Seminar, *Introduction to stochastic bandits*.

Dec. 2020 **NeurIPS 2020**, Poster Session, *Finite continuum-armed bandits*.

Oct. 2019 **Network Days III - Institut des Hautes Études Scientifiques**, Workshop, *Robust link prediction in the stochastic block model*.

April 2019 **Huitièmes rencontres des Jeunes Statisticiens**, Conference, *Maximum likelihood estimation of sparse networks with missing observations*.

Oct. 2019 **Network Days II - Laboratoire de Mathématiques d'Orsay**, Workshop, *Sparse network estimation*.