

Solenne Gaucher

Ph.D. Statistics and Machine Learning

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I have recently defended my Ph.D. in statistics and machine learning, and I am looking for a position as research scientist.

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.
- 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 **Software 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 **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, submitted to *International Journal of Forecasting*.
- 2021 **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*.

Software

- R* package **gsbm**, Robust link prediction and outlier detection in the Generalized Stochastic Block Model, S. Gaucher and G. Robin.

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*.

Additional Duties

- Reviewer**, for *NeurIPS*, *JMLR*, *Bernoulli*, *JSIP*, *EJS*.
- 2019-2020 **Seminar co-organiser**, for the M2 "Mathématiques de l’Aléatoire" at Orsay.
- 2018-2019 **Student representative**, to the doctoral school conseil.