

Geneviève Robin | PhD

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Statistical learning, Missing values, Network analysis, MCMC algorithms, Applications to medical and ecological data analysis

Current research projects

Federated Expectation-Maximization

Collaboration with A. Dieuleveut, G. Fort, É. Moulines

2021 -

Bayesian framework for the single dipole model in ECG data

Collaboration with R. Dubois, É. Moulines, G. Victorino Cardoso

2021 -

Multiscale Graphical model for high-dimensional ecological networks

Collaboration with C. Ambroise, E. Do Sanou

2020 -

Assessing treatment response in children with cystic fibrosis from observational data

Collaboration with M. Cornet, I. Sermet Gaudelus, V. Stoven

2020 -

Bayesian Statistics and Molecular Simulation

Collaboration with T. Lelièvre, G. Pavliotis, G. Stoltz

2019 -

Professional experience

Chargée de Recherche (Permanent Researcher)

CNRS, Université d'Évry Val d'Essonne, France

Évry-Courcouronnes

2020 -

Post-doctoral Researcher

INRIA, École des Ponts ParisTech, France

Marne la Vallée

2019 - 2020

Visiting Student Researcher

Stanford University, États-Unis

Stanford, CA

2018

PhD candidate

École Polytechnique, Supervisors: J. Josse, É. Moulines

Palaiseau

2016 - 2019

Jury: F. Bach (president), J. Bigot (reviewer), T. Hastie (reviewer), G. Biau, O. Klopp, K. Lounici

Education

ENS de Cachan

MSc. Mathematics, Vision, Learning (highest honors)

France

2015 - 2016

École Polytechnique

Diplôme d'Ingénieur, France

Palaiseau

2012 - 2015

PhD Students supervision

Gabriel Victorino Cardoso

Generative models for time-series with applications in Cardiology

École Polytechnique

2021-

Edmond Do Sanou

Hierarchical graphical models for ecological data

Université d'Évry Val d'Essonne

2020-

Matthieu Cornet

Analysis of observational data for the follow-up of patients with cystic fibrosis

École des Mines de Paris

2020-

Teaching

Université d'Évry Val d'Essonne

Statistical learning (M1), Data analysis with missing values (M2)

Évry

2020 -

École Polytechnique <i>Statistics in Action, Machine learning, Data Challenge, Hackathon</i>	Palaiseau 2020 -
Université Mohamed VI Polytechnique <i>Regression, Supervised learning, Statistics, Sampling</i>	Ben Guerir, Morocco 2019 -
ESSEC Business School <i>Statistics (Lectures, TD and TP at L3 level)</i>	Cergy 2019 - 2020
Master Data Science for Business (X - HEC) <i>Machine learning, Statistics, Statistics with R, Introduction to R</i>	Palaiseau 2017 - 2019
Master Data Science (Université Paris-Saclay) <i>Machine learning (TP)</i>	Palaiseau 2016 - 2017

Publications

Federated Expectation-Maximization with variance reduction and heterogeneity mitigation <i>NeurIPS 2021, A. Dieuleveut, G. Fort, É. Moulines, G. Robin</i>	2021
Outliers detection in networks with missing links <i>Computational Statistics and Data Analysis, S. Gaucher, O. Klopp, G. Robin</i>	2021
Imputation of large-scale monitoring count data via penalized estimation <i>Methods in Ecology and Evolution, M. Dakki, G. Robin, M. Suet et al</i>	2020
Imputation of mixed data with multilevel SVD <i>Journal of Computational and Graphical Statistics, F. Husson, J. Josse, B. Narasimhan, G. Robin</i>	2019
Main effects and interactions in mixed and incomplete data frames <i>Journal of the American Statistical Association, G. Robin, O. Klopp, J. Josse, É. Moulines, R. Tibshirani</i>	2019
Low-rank model with covariates for count data analysis <i>Journal of Multivariate Analysis, G. Robin, J. Josse, É. Moulines, S. Sardy</i>	2019
Low-rank interaction and sparse additive effects model for large data frames <i>NeurIPS 2018, G. Robin, H.-T. Wai, J. Josse, O. Klopp, É. Moulines</i>	2018
Incomplete graphical model inference via latent tree aggregation <i>Statistical Modelling, G. Robin, C. Ambroise, S. Robin</i>	2018

Talks in conferences

4+ Virtual conferences <i>NeurIPS 2021, Mathematical Aspects of Materials Science, CMStatistics, IMS One World Symposium</i>	2020-2021
51èmes Journées de Statistique <i>Université de Lorraine</i>	Nancy 2019
Jerusalem Joint Statistical Event <i>Best student paper award</i>	Jerusalem 2018
Advances in Neural Information Processing Systems 31 (NeurIPS 2018) <i>Spotlight presentation, student award</i>	Montréal 2018
University of Helsinki <i>European Meeting of Statisticians</i>	Helsinki 2017
New Challenges in Applied Mathematics <i>Sharif University</i>	Tehran 2017
Statistical Methods for Post-Genomic Data <i>Imperial College London</i>	London 2017
20+ invited talks in seminars <i>Stanford University, Université de Bordeaux, IACM Heraklion, Sorbonne Université, ENS de Lyon, etc.</i>	2017-present

Awards

Fondation L'Oréal <i>Prix Jeunes Talents France L'Oréal-UNESCO Pour les Femmes et la Science</i>	2019
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Software development

R package: gsbm: Outliers detection in networks with missing links

R package: lori: Imputation of count data using side information

R package: mimi: Estimation of main effects and interactions in mixed and incomplete data

Programming: R, Python, Julia, Matlab, C++

Languages

Languages: French (native), English (fluent), Arabic (advanced), German (intermediate)

Associative commitment

Solidarités Saint Bernard

French lessons for refugees, France

Paris

2018-2019

Proxité

Scientific tutoring for higher education students newly arrived in France, France

Paris

2017-2018

Afev

Animations for children and teenagers in asylum seeker centers, France

Paris

2015-2016

Fondation Apprentis d'Auteuil

Tutoring and animation for school-dropout teenagers , France

La Loupe

2012-2013