

Margaux Zaffran

Postdoctoral researcher
in statistics

28 years old
French nationality



Education

- Viva:** **Inria and École polytechnique**, PhD in Statistics & Machine Learning. Palaiseau, France
25/06/2024 Post-hoc predictive uncertainty quantification: methods with applications to electricity price forecasting.
Supervised by [Aymeric Dieuleveut](#) (École polytechnique) and [Julie Josse](#) (Inria).
Committee: Emmanuel Candès (Stanford University), Florence Forbes (Inria), Éric Moulines (École polytechnique), Pierre Pinson (Imperial College London), Aaditya Ramdas (Carnegie Mellon University), Étienne Roquain (Sorbonne Université).
- 2019-2020** **École polytechnique, Institut Polytechnique de Paris**, MSc in Statistics & Data Sciences. Palaiseau, France
- Statistical learning theory, generalization properties, bootstrap and resampling methods
 - Online learning and aggregation, reinforcement learning, deep learning
 - Optimal transport, probabilistic graphical models, extreme values, Bayesian learning
- Average grade: 17.7/20 (an average of 10/20 is required to obtain the diploma: above 16/20 is thus regarded with highest honors).
- 2016-2020** **ENSTA Paris, Institut Polytechnique de Paris**, BSc and MSc in Applied Mathematics. Palaiseau, France
Top-tier French "Grande École" (engineering school).
Simulation and Mathematical Engineering track, Optimization and Data Sciences specialization.
- Statistics: statistical modeling, linear and non-linear time series
 - Optimization: Markov decision process, large systems, proximal methods
- GPA: 4.04/4. Ranked in the [top 5% of the first year class](#) (common core, 150 students).
- 2014-2016** **Lycée Louis-Le-Grand, Mathematics and Physics**, classes préparatoires aux grandes écoles. Paris, France
- 2014** **Lycée Marseilleveyre**, French scientific Baccalauréat and Spanish Bachillerato. Marseille, France
Spanish international section, 11 weekly hours of literature and history of the Spanish-speaking world.

Academic and industry research experience

Employment history

- Nov. 2024** **Postdoctoral researcher, UC Berkeley Department of Statistics.** Berkeley, US
- current Working with [Ryan J. Tibshirani](#)
- 2020-2023** **Research engineer, Electricité De France (EDF) R&I.** Palaiseau, France
During my PhD, I was employed by EDF R&I to conduct research on short-term probabilistic forecasting of electricity market prices with [Olivier Féron](#) and [Yannig Goude](#), as part of an *Industrial Convention for Training through Research*.
This professional training allowed me to apply my methodology to the energy sector concretely and gain in-depth knowledge of the industrial world.
- April to Oct. 2020** **Research student, Laboratory for Climate and Environmental Sciences.** Gif-sur-Yvette, France
Clustering of extreme rainfall by coupling machine learning algorithms and Kullback-Leibler divergence.
Supervised by [Philippe Naveau](#).
- March to Aug. 2019** **Research engineer intern, General Electric Healthcare.** Buc, France
Predicting user (*i.e. medical doctor*) preferences of an image review software by machine learning.
- Sep. 2018 to Mar. 2019** **Research engineer intern, Data Innovation Lab, EDF R&I.** Palaiseau, France
Developed machine learning methods to drive a nuclear unit.

International visiting research stays

- Aug. 2023** **Visiting research student, Stanford University.** Stanford, US
Hosted by [Madeleine Udell](#).

August to Oct. 2022	Visiting research student, Technion – Israel Institute of Technology. Collaboration with Yaniv Romano . Worked on the impact of missing covariates in the resulting predictive uncertainty.	Haifa, Israel
May to Aug. 2018	Visiting research student, School of Mathematics Research, University of Bristol. Worked on quantile regression: proving the existence of an optimal bandwidth for smoothing the pinball loss w.r.t. coefficients mean squared error in Quantile Generalized Additive Models. Supervised by Matteo Fasiolo and Simon N. Wood .	Bristol, UK

Grants and awards

Awards

2023	One of the Young Talents for France, For Women in Science, Fondation L'Oréal–UNESCO. Jury composed of members of the French Academy of Sciences. 35 PhD and post-doctorate women awarded among more than 600 applicants from various scientific fields.	15k€
2022	Laureate for France of the Séphora Berrebi Scholarship for Women in Advanced Mathematics, Association Séphora Berrebi. Jury members: Maria J. Esteban (president), Bo'az Klartag, Laurent Lafforgue, Erwan Le Pennec, Mathieu Rosenbaum, Sylvia Serfaty, Mikhail Sodin, Ofer Zeitouni.	2k€
2022	Best MSc thesis, ENSTA Paris, Institut Polytechnique de Paris. Popularized pitch in front of more than 1000 people at Folies Bergères (Paris). Awarding the research internship at the Laboratoire des Sciences du Climat et de l'Environnement (MSc thesis).	2k€
2014	First prize, National Physics Olympiad. Research project in a team of 3, supervised by our physics teacher Claude Torregrosa, on a topic we have chosen. Written report and oral presentations in front of two scientific juries. One-day presentation at the Palais de la Découverte (Paris) in front of their public visitors (children, neophytes, etc).	

Grants

2022	Junior scientific visibility, Fondation Mathématique Jacques Hadamard and associated LabEx. Funding the research stay at the Technion – Israel Institute of Technology.	2.3k€
2018	Excellence research scholarship, Paris-Saclay University. Funding the research internship at the University of Bristol.	1.8k€
2018	Mobility funding, ERASMUS+. Funding the research internship at the University of Bristol.	600€

Teaching and supervision

April to Aug. 2022	MSc Student Supervision, EDF R&I, Grégoire Dutot MSc thesis (X-MVA). Adaptive probabilistic forecasting of French electricity spot prices in the crisis period of 2020 and 2021.	Palaiseau, France
-----------------------	--	-------------------

Research tutorials at international conferences

July 2024	41st International Conference on Machine Learning (ICML)	Wien, Austria
July 2024	40th conference on Uncertainty in Artificial Intelligence (UAI)	Barcelona, Spain
Sep. 2023	ENBIS Annual European Conference	Valencia, Spain
↔ Conformal prediction tutorial made available online and open source at https://conformalpredictionintro.github.io .		

Teaching activities in BSc and MSc programs

The hourly evaluation refers to the *time passed teaching in a classroom*. It does not include courses preparation, exam surveillance, exam correction nor help to students (as I am devoted to my students, this excludes a lot of hours exchanging through emails or via videocalls, if not onsite meetings – i.e. what can be considered office hours in some countries).

2022 and 2023	2nd year of MSc, Université Paris Dauphine – PSL, 4h/year: total 8h. Complete creation of a 4h practical session on Electricity Price Forecasting for the <i>Business Cases</i> class of the <i>MSc Digital Economics</i> .	Paris, France
------------------	---	---------------

2021, 2022, and 2023	Last year of BSc, ENSTA Paris, Institut Polytechnique de Paris , 30h/year: total 90h. <ul style="list-style-type: none"> • Introduction to probability • Introduction to statistics 	Palaiseau, France
2021 and 2022	1st year of MSc, ENSTA Paris, Institut Polytechnique de Paris , 15h/year: total 30h. Practical sessions on linear time series.	Palaiseau, France

Research papers

Note: * denotes equal contribution.

Submitted preprints

2024	Predictive Uncertainty Quantification with Missing Covariates M. Zaffran, J. Josse, Y. Romano, A. Dieuleveut	preprint on arXiv
2024	Adaptive probabilistic forecasting of French electricity spot prices G. Dutot*, M. Zaffran*, O. Féron, Y. Goude	preprint on arXiv

Peer-reviewed publications

2023	Conformal Prediction with Missing Values M. Zaffran, A. Dieuleveut, J. Josse, Y. Romano	<i>40th International Conference on Machine Learning</i>
2022	Adaptive Conformal Predictions for Time Series M. Zaffran, O. Féron, Y. Goude, J. Josse, A. Dieuleveut	<i>39th International Conference on Machine Learning</i>
2021	qgam: Bayesian non-parametric quantile regression modelling in R M. Fasiolo, S. N. Wood, M. Zaffran, R. Nedellec, Y. Goude	<i>Journal of Statistical Software</i>
2020	Fast calibrated additive quantile regression M. Fasiolo, S. N. Wood, M. Zaffran, R. Nedellec, Y. Goude	<i>Journal of the American Statistical Association</i>
2020	On the Wiener optical method to study molecular diffusion in liquids J.M. Roussel, M. Gailhanou, A. Larrivé, L. Montero, M. Zaffran, C. Torregrosa	<i>American Journal of Physics</i>

Selected talks at international conferences and seminars

I believe that dissemination is an integral part of research, thus I seek to give talks that are pedagogical and engaging. Below is a selection from the **45+ talks** I have delivered.

Dec. 2024	International Conference on Statistics and Data Science	Nice, France
June 2024	LJK – DATA seminar	Grenoble, France
Jan. 2024	Mathematical Statistics Day	Paris, France
Oct. 2023	IMT – Statistics and Optimization seminar	Toulouse, France
Aug. 2023	Emmanuel Candès' group meeting	Stanford, US
Aug. 2023	Madeleine Udell's group meeting	Stanford, US
May 2023	EPFL – Swiss Data Science Center	Lausanne, Switzerland
Feb. 2023	AgroParisTech/INRAE – MIA seminar	Palaiseau, France
July 2022	DFUQ ICML Worskhop (Spotlight)	Baltimore, US
July 2022	39th International Conference on Machine Learning	Baltimore, US (recording link)
June 2022	Mathematical Methods for Modern Statistics 3	Marseille, France
Mar. 2022	International Seminar on Distribution-Free Statistics	online (recording link)

Community service

Organization and animation of scientific events

- 2022-now **President (since 2023), *The Young Statisticians, SFdS (French Statistical Society)*.**
Active member of the Young Statisticians Group of the French Statistical Society (SFdS): elected vice-president in 2022-2023, and elected President since then.
The SFdS Young Statisticians Group aims at structuring a professional network and promoting scientific discussions among the young members of the association.
▷ Organizing special sessions and non-technical events during the yearly conference French Statistical Days (JdS):
- Young Statisticians special sessions:
 - Gender bias, ordinary sexism, sexist and sexual violences in academia (2024),
 - Ethics in scientific research (2023),
 - Mental health of the young scientists (2022),
 - Scientific lunches promoting exchanges on a given theme during a lunch (2022, 2023, 2024),
 - Keynote speakers and young statisticians meeting (2022, 2023, 2024).
- ▷ Organizing the *Young Statisticians and Probabilists day*, a yearly day-seminar held at the Henri Poincaré Institute, in 2025 (13th edition), in 2024 (12th edition) and in 2023 (11th edition), gathering around 60 persons.
- 2023-2024 **Co-founder and co-organizer, Aymeric Dieuleveut's weekly group meetings.**
- 2021-2024 **Elected member, parity and diversity committee, Center for Applied Mathematics – École polytechnique.**
- 2016-2018 **President (2018) & co-organizer (2017), RISE² (*Innovation and Sciences Encounters of ENSTA Paris Students*).**
Day-event bringing together companies, researchers and start-ups.
Keynote speakers: Cédric Villani (2017), Étienne Klein (2018).

Reviewing

- *Journal of the Royal Statistical Society: Series B (JRSS B)*
- *Journal of Business and Economic Statistics (JBES)*
- *International Journal of Forecasting (IJF)*
- *Machine Learning*
- AISTATS 2023 (among the 10% top reviewers)
- NeurIPS 2023

Outreach

- 2023-now **Booth animation, *For Girls in Science*.**
Participation to a full day of outreach at the Cité des Sciences (Paris) with 500 high-school students attendees.
- 2022-now **Active member, *Séphora Berrebi Association*.**
Participation to various masterclasses for high school girls:
- Outreach conference speaker,
 - Creation and animation of an outreach workshop session of two hours for around 10 girls.
- 2022-now **Active member, *Women and Mathematics, Animath*, <https://filles-et-maths.fr/>.**
- Speaker during various speed-meetings with high-school girls,
 - Interviewee for a video for high school science teachers and young girls,
 - Conference speaker during a *Rendez-vous des Jeunes Mathématiciennes et Informaticiennes*, a full weekend of mathematics and computer science outreach for high school girls.
- 2022-now **Booth animations, *Mathematical Culture and Games Fair*.**
This annual exhibition gathers teenagers and young adults during 3 days to discover mathematics in an unusual, fun and lively way.
- 2015-now **Conference talks, *Lycée Marseilleveyre*.**
Outreach interventions in high school classes.