

# Margaux Zaffran

PhD in statistics  
(applied mathematics)

Palaiseau, France  
27 years old  
French nationality



## Education

- 2020-2024 **INRIA and École polytechnique, PhD Student in statistics.** Palaiseau, France  
Post-hoc predictive uncertainty quantification: methods with applications to electricity price forecasting.  
Supervised by [Aymeric Dieuleveut](#) (École polytechnique) and [Julie Josse](#) (INRIA).  
*Committee:* E. Candès (Stanford University), F. Forbes (INRIA), É. Moulines (École polytechnique), P. Pinson (Imperial College London, referee), A. Ramdas (Carnegie Mellon University), É. Roquain (Sorbonne Université, referee)
- 2019-2020 **École polytechnique, MSc Data Sciences, double degree.** 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.
- 2016-2020 **ENSTA Paris, Institut Polytechnique de Paris, engineering track.** Palaiseau, France  
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.

## Professional activities

- 2020-2023 **Research engineer (PhD contract), Electricité De France (EDF) R&D.** Palaiseau, France  
Short-term probabilistic forecasting of electricity market prices.  
Supervised by [Olivier Féron](#) and [Yannig Goude](#).

## Teaching and supervision

- 2022 **MSc Student Supervision, EDF R&D, 5 months, Grégoire Dutot MSc thesis (MVA).** Palaiseau, France
- 2022, 2023 **Teaching Assistant, Université Paris Dauphine - PSL, 2nd year of the MSc Digital Economics.** Paris, France
- 2021, 2022 & 2023 **Teaching Assistant, ENSTA Paris, 3rd year of BSc and 1st year of MSc.** Palaiseau, France  
  - Linear time series, 1st year of MSc (15h/year)
  - Introduction to probability, 3rd year of BSc (15h/year)
  - Introduction to statistics, 3rd year of BSc (15h/year)

## Visiting stays and internships

- 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.** Haifa, Israel  
Collaboration with [Yaniv Romano](#).
- April to Oct. 2020 **Research student, Laboratoire des Sciences du Climat et de l'Environnement.** 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 **Research engineer intern, Data Innovation Lab, EDF R&D.** Palaiseau, France  
to Mar. 2019 Developed machine learning methods to drive a nuclear unit.

May to **Visiting research student, School of Mathematics Research, University of Bristol.** Bristol, United Kingdom  
Aug. 2018 Worked on quantile regression: optimal bandwidth for smoothing the pinball loss w.r.t. coefficients mean squared error.  
Supervised by [Matteo Fasiolo](#) and [Simon N. Wood](#).

## Grants and awards

2024 **City medal, Palaiseau.**

2023 **One of the Young Talents for France, For Women in Science, Fondation L'Oréal-UNESCO, 15k€.**  
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.

2022 **Laureate for France of the Séphora Berrebi Scholarship for Women in Advanced Mathematics, Association Séphora Berrebi, 2k€.**  
Jury members: Maria J. Esteban (president), Bo'az Klartag, Laurent Lafforgue, Erwan Le Pennec, Mathieu Rosenbaum, Sylvia Serfaty, Mikhail Sodin, Ofer Zeitouni.

2022 **Junior scientific visibility, FMJH and LMH, 2.3k€.**  
Funding the research stay at the Technion - Israel Institute of Technology.

2022 **Best MSc thesis project, ENSTA Paris, 2k€.**  
Awarding the research internship at the Laboratoire des Sciences du Climat et de l'Environnement (MSc thesis).  
Popularized pitch in front of more than 1000 people at Folies Bergères (Paris).

2018 **Excellence research scholarship, Université Paris-Saclay, 1.8k€.**  
Funding the research internship at the University of Bristol.

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).

## Scientific activities

### Research papers

2024 **Predictive Uncertainty Quantification with Missing Covariates** preprint on arXiv  
**M. Zaffran**, J. Josse, Y. Romano, A. Dieuleveut submitted to *Journal of Machine Learning Research*

2024 **Adaptive probabilistic forecasting of French electricity spot prices** preprint on arXiv  
G. Dutot, **M. Zaffran**, O. Féron, Y. Goude submitted to *Applied Energy*

2023 **Conformal Prediction with Missing Values** *40th International Conference on Machine Learning*  
**M. Zaffran**, A. Dieuleveut, J. Josse, Y. Romano

2022 **Adaptive Conformal Predictions for Time Series** *39th International Conference on Machine Learning*  
**M. Zaffran**, O. Féron, Y. Goude, J. Josse, A. Dieuleveut

2021 **qgam: Bayesian non-parametric quantile regression modelling in R** *Journal of Statistical Software*  
M. Fasiolo, S. N. Wood, **M. Zaffran**, R. Nedellec, Y. Goude

2020 **Fast calibrated additive quantile regression** *Journal of the American Statistical Association*  
M. Fasiolo, S. N. Wood, **M. Zaffran**, R. Nedellec, Y. Goude

2020 **On the Wiener optical method to study molecular diffusion in liquids** *American Journal of Physics*  
J.M. Roussel, M. Gailhanou, A. Larrivé, L. Montero, **M. Zaffran**, C. Torregrosa

## Research tutorials

July 2024	<b>41st International Conference on Machine Learning (ICML)</b> , Wien, Austria	
July 2024	<b>40th Uncertainty in Artificial Intelligence (UAI)</b> , Barcelona, Spain	
Sep. 2023	<b>ENBIS Annual European Conference</b> , Valencia, Spain	<i>Invited to give a half-day course</i>
April 2023	<b>MASPIN days</b> , Besançon, France	<i>Half-day course</i>
↔ Conformal prediction tutorial made available online and open source.		

## Research talks

### Conferences

Jan. 2024	<b>Mathematical Statistics Day</b> , Paris, France	<i>Invited</i>
Sep. 2023	<b>StatMathAppli</b> , Fréjus, France	
July 2023	<b>54th French Statistical Days</b> , Brussels, Belgium	<i>Invited</i>
July 2022	<b>DFUQ ICML Worskhop</b> , Baltimore, US	<i>Spotlight</i>
July 2022	<b>39th International Conference on Machine Learning</b> , Baltimore, US (recording link)	
June 2022	<b>Mathematical Methods for Modern Statistics 3</b> , Marseille, France	
June 2022	<b>53th French Statistical Days</b> , Lyon, France	
June 2021	<b>52nd French Statistical Days</b> , Online	

### Seminars

June 2024	<b>LJK – DATA seminar</b> , Grenoble, France	<i>Invited</i>
June 2024	<b>INRIA Grenoble – THOTH seminar</b> , Grenoble, France	
Dec. 2023	<b>PhD days PreMeDICaL and METHODS INRIA teams</b> , Paris, France	<i>Invited</i>
Oct. 2023	<b>IMT – Statistics and Optimization seminar</b> , Toulouse, France	<i>Invited</i>
Oct. 2023	<b>FAST-BIG – Stats workshop</b> , Paris, France	<i>Invited</i>
Aug. 2023	<b>Emmanuel Candès’ group meeting</b> , Stanford, US	
Aug. 2023	<b>Madeleine Udell’s group meeting</b> , Stanford, US	
June 2023	<b>INRIA Saclay – MIND seminar</b> , Palaiseau, France	<i>Invited</i>
May 2023	<b>EPFL – Swiss Data Science Center</b> , Lausanne, Switzerland	
Mar. 2023	<b>INRIA Causality and Missing Data Seminar</b> , Online	
Feb. 2023	<b>Sorbonne Université – LPSM PhD Students seminar</b> , Paris, France	<i>Invited</i>
Feb. 2023	<b>AgroParisTech/INRAE – MIA seminar</b> , Palaiseau, France	<i>Invited</i>
Mar. 2022	<b>International Seminar on Distribution-Free Statistics</b> , online (recording link)	<i>Invited</i>
Nov. 2021	<b>INRIA Causality and Missing Data Seminar</b> , Online	
April 2021	<b>Machine Learning Journal Club</b> , Online	

### 15+ talks with an internal audience:

- 3 Causality and Missing Data Seminars, *INRIA*
- 4 SIMPAS Group Meetings, *CMAP, École Polytechnique*
- 3 Group Meetings, *CMAP, École Polytechnique*
- 1 PhD Student Seminar, *CMAP, École Polytechnique*
- 5 Group Meetings, *EDF R&D*
- 2 Group Meetings, *Technion - Israel Institute of Technology*

## Research posters

July 2023	<b>40th International Conference on Machine Learning</b> , Honolulu, US
June 2023	<b>Foundations of Computational Mathematics</b> , Paris, France
April 2023	<b>StatLearn workshop</b> , Montpellier, France
Dec. 2022	<b>International Conference on Statistics and Data Science</b> , Florence, Italy
July 2022	<b>DFUQ ICML Workshop</b> , Baltimore, US
July 2022	<b>39th International Conference on Machine Learning</b> , Baltimore, US
Sep. 2021	<b>FIME days</b> , Palaiseau, France

## Reviewing

- *Journal of Business and Economic Statistics* (JBES)
- *International Journal of Forecasting* (IJF)
- *Machine Learning*
- AISTATS 2023 (among the 10% top reviewers)
- NeurIPS 2023

## Involvement

- 2023-now **Co-founder and co-organizer**, *Aymeric Dieuleveut's group meetings*.
- 2023-now **Volunteer**, *For Girls in Science*.  
Participation to a full day of outreach at the Cité des Sciences.
- 2023-now **President**, *The Young Statisticians, SFdS (French Statistical Society)*.  
Organizing the 12th Young Statisticians and Probabilists day.  
Organizing the Youth Activities at the 2024 French Statistical Days (JdS2024).
- 2022-2023 **Vice-president**, *The Young Statisticians, SFdS (French Statistical Society)*.  
Organizing the 11th Young Statisticians and Probabilists day.  
Organizing the Youth Activities at the 2023 French Statistical Days (JdS2023).
- 2022 **Volunteer**, *The Young Statisticians, SFdS (French Statistical Society)*.  
Helping for the organization of the Youth Activities at the 2022 French Statistical Days (JdS2022).
- 2022-now **Volunteer**, *Séphora Berrebi Association*.  
Participation to various masterclasses for high school girls.
- 2022-now **Volunteer**, *Femmes et mathématiques, 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.
- 2021-2024 **Elected member**, *parity and diversity committee, CMAP, École polytechnique*.
- 2020-2021 **Member**, *Machine Learning Journal Club, CMAP, École polytechnique*.
- 2016-2018 **Project leader (2018) & member (2017)**, *RISE<sup>2</sup> (Rencontres Innovation et Sciences des Étudiants de l'ENSTA Paris)*.  
Event bringing together companies, researchers and start-ups.  
Keynote speakers: Cédric Villani (2017), Étienne Klein (2018).
- 2016-2017 **Treasurer**, *GraviTation (ENSTA Paris science association)*.
- 2015-now **Volunteer**, *Lycée Marseilleveyre*.  
Interventions in high school classes.