

# JEAN-BAPTISTE FERMANIAN

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## RESEARCH EXPERIENCES

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**Post-doctoral researcher.** **2024 - Present**  
INRIA, PreMeDICaL team. *2025 - Present*  
*Adaptive personalized federated learning*, advised by Aurélien Bellet.  
Université de Montpellier, INRIA, IROKO team. *2024 - 2025*  
*Conformal prediction for multiple inputs*, advised by Joseph Salmon and Mohamed Hebiri.

## TEACHING EXPERIENCES

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**Lectures at Université de Montpellier.** Stochastic modelisation. *2024 - 2025*  
*Bachelor level.*  
**Exercice sessions at Université Paris-Saclay.** Probability - Mathematics Orals - *2021 - 2024*  
Statistical Inference - Statistics for Biology.  
*Bachelor level.*  
**Orals in preparatory class at Lycée Henri IV, Paris.** *2020 - 2021*

## EDUCATION

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**PhD in Statistics.** Université Paris-Saclay. **2021 - 2024**  
*High dimensional multiple means estimation and testing with applications to machine learning.*  
Supervision: Gilles Blanchard and Magalie Fromont.  
Referees: Vladimir Koltchinskii and Samory Kpotufe.  
Jury: Alexandra Carpentier, Elisabeth Gassiat, Etienne Roquain and Alexandre Tsybakov.  
**Ecole Normale Supérieure de Rennes - Université de Rennes 1.** **2017 - 2021**  
Pre-doctoral research year at Université Paris-Saclay. *2020 - 2021*  
Master's Degree in Randomness. *2020*  
Bachelor's Degree in Computer Science (double degree). *2019*  
Bachelor's Degree in Mathematics. *2018*  
**Preparatory Class,** Lycée Henri IV, Paris. **2015 - 2017**  
**Baccalaureat in science.** **2015**

## PRE-DOCTORAL RESEARCH EXPERIENCES

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**Internship** with Gilles Blanchard, at Université Paris-Saclay. *February - July 2020*  
*Norm concentration in high dimension.*  
**Internship** with Magalie Fromont at Université de Rennes 2. *September - December 2020*  
*Aggregation of nearest neighbor tests.*  
**Internship** with Jean-François Coeurjolly at UQAM. *May - July 2019*  
*Monte Carlo method and statistics of determinantal processes.*  
**Internship** with Bruno Ziliotto at Université de Paris-Dauphine. *May - June 2018*  
*Stochastic homogenization of Hamilton-Jacobi viscosity equations.*

## PUBLICATIONS

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*Conformal Prediction for Long-Tailed Classification*, joint work with T. Ding and J. Salmon, arXiv:2507.06867, 2025.

*Class conditional conformal prediction for multiple inputs by p-value aggregation*, joint work with M. Hebiri and J. Salmon, arXiv:2507.07150, 2025. Accepted at *NeurIPS25*.

*Transductive Conformal Inference for full Ranking*, joint work with P. Humbert and G. Blanchard, arXiv:2501.11384, 2025. Accepted at *NeurIPS25*.

*A high dimensional analysis of attention*, joint work with G. Blanchard, *Chapter of Phd Manuscript*, HAL:tel-04744920v1, 2024.

*Estimation of multiple mean vectors in high dimension*, joint work with H. Marienwald and G. Blanchard, arXiv:2403.15038, 2024. To be published in *JRSSB*.

*Nonasymptotic one-and two-sample tests in high dimension with unknown covariance structure*, joint work with G. Blanchard. *Foundations of Modern Statistics (Festschrift in Honor of Vladimir Spokoiny)*, 2023.

*High-Dimensional Multi-Task Averaging and Application to Kernel Mean Embedding*, joint work with H. Marienwald and G. Blanchard. *AISTATS 2021*.

*An example of failure of stochastic homogenization for viscous Hamilton-Jacobi equations without convexity*, joint work with W. Feldmann and B. Ziliotto. *Journal of Differential Equations*, 2021.

## SCIENTIFIC ACTIVITIES

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**Reviewing Service.** *Philosophical Transaction* (2025), *EJS* (2025), *JASA* (2025), *Bernoulli* (2024).

**Organization of a working group about Conformal Prediction.** *2023 - 2024*  
Laboratoire de Mathématiques d'Orsay.

**Parimaths.** Mathematics vulgarization session for high school students. *January 2023*  
Ecole Normale Supérieure, Paris.

## LINGUISTIC AND COMPUTER SKILLS

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<b>Languages</b>	French,	Native language.
	English,	C1 Level.
	German,	B1 Level.
<b>Software</b>	Python, GitHub, L <sup>A</sup> T <sub>E</sub> X,	Regular usage.
	C, R, SQL, Scilab, Caml.	Occasional usage.

## COMMUNICATIONS

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<b>VITE 2025</b> , Montpellier.	<i>December 2025</i>
<b>Neurips 2025</b> , San Diego. (posters)	<i>December 2025</i>
<b>Team Seminar</b> , UC Berkeley.	<i>November 2025</i>
<b>Seminaire Probabilités et Statistiques</b> , Université d'Angers.	<i>November 2025</i>
<b>Team seminar MAGNET team</b> , Inria Lille.	<i>November 2025</i>
<b>MADSTAT Seminar</b> , Toulouse School of Economics, Toulouse.	<i>November 2025</i>
<b>Statistics seminar of Télécom Paris</b> , Télécom Paris, Paris.	<i>October 2025</i>
<b>Statistics seminar of CEREMADE</b> , Université Paris-Dauphine.	<i>September 2025</i>
<b>Intern seminar of MISTAE</b> , Inrae, Montpellier	<i>September 2025</i>
<b>Stat Maths appli workshop</b> , Fréjus. (poster)	<i>September 2025</i>
<b>CAP 2025 : Conférence sur l'Apprentissage Automatique</b> , Dijon. (poster)	<i>July 2025</i>
<b>Journée de Statistique de la SFDS</b> , Aix-Marseille Université.	<i>June, 2025</i>
<b>ML-MTP : Machine Learning in Montpellier</b> , Inria, Montpellier.	<i>December 2024</i>
<b>Seminar of Probability and Statistics</b> , Université Gustave-Eiffel.	<i>April 2024</i>
<b>Workshop ASCAI</b> , Universität Potsdam.	<i>February 2024</i>
<b>Workshop FAST-BIG</b> , IHP, Paris.	<i>October 2023</i>
<b>Bayesian reading group of Oxford University</b> , online.	<i>June 2023</i>
<b>Celeste team seminar</b> , Laboratoire de mathématiques d'Orsay.	<i>March 2023</i>
<b>IHP GESDA pre-school</b> , Cargèse. (poster)	<i>September 2022</i>
<b>Stat Maths appli workshop</b> , Fréjus. (poster)	<i>September 2022</i>
<b>Statistical and Geometrical Divergences for ML</b> , Université de Rennes 2.	<i>June 2022</i>
<b>Journée de Statistiques de la SFDS</b> , Université Claude Bernard Lyon 1.	<i>June 2022</i>
<b>Rencontre des Jeunes Statisticien.ne.s</b> , Porquerolles.	<i>April 2022</i>
<b>AISTATS</b> , online. (poster)	<i>September 2021</i>
<b>Workshop FAST-BIG</b> , online.	<i>March 2021</i>