

JEAN-BAPTISTE FERMANIAN

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RESEARCH EXPERIENCES

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

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

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

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

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

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

Languages	French,	Native language.
	English,	C1 Level.
	German,	B1 Level.
Software	Python, GitHub, L ^A T _E X,	Regular usage.
	C, R, SQL, Scilab, Caml.	Occasional usage.

COMMUNICATIONS

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