

# JEAN-BAPTISTE FERMANIAN

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**KEYWORDS:** Multi-task learning - Multiple testing - High Dimension - Conformal Prediction

## EDUCATION

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<b>PhD in Statistics.</b> <i>Kernel Mean Embedding Estimation and Multiple Testing in High Dimension.</i> Université Paris-Saclay, supervised by Gilles Blanchard and Magalie Fromont.	<i>2021 - 2024</i>
<b>Ecole Normale Supérieure de Rennes - Université de Rennes 1.</b> Pre-doctoral research year at Université Paris-Saclay.	<i>2017 - 2021</i> <i>2020 - 2021</i>
Master's Degree in Randomness, with honors.	<i>2020</i>
Bachelor's Degree in Computer Science (double degree), with honors.	<i>2019</i>
Bachelor's Degree in Mathematics, with honors.	<i>2018</i>
<b>Preparatory Class</b> , Lycée Henri IV, Paris. Two-year undergraduate intensive course in mathematics and physics.	<i>2015 - 2017</i>
<b>Baccalaureat in science</b> , with honors.	<i>2015</i>

## RESEARCH EXPERIENCES

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<b>Post-doctoral researcher.</b> Université de Montpellier.	<i>2024 - Present</i>
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## PRE-DOCTORAL RESEARCH EXPERIENCES

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

## PUBLICATIONS

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*Estimation of multiple mean vectors in high dimension*, joint work with H. Marienwald et G. Blanchard, arXiv:2403.15038, 2024. Submitted to 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 et G. Blanchard. *AISTATS 2021*.

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

## COMMUNICATIONS

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<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>

## LINGUISTIC AND COMPUTER SKILLS

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

## TEACHING

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<b>Teaching Assistant at Université Paris-Saclay.</b> Probability - Mathematics Orals - Statistical Inference - Statistics for Biology. <i>Bachelor level.</i>	<i>2021 - 2024</i>
<b>Mathematics examiner in preparatory class at Lycée Henri IV, Paris.</b>	<i>2020 - 2021</i>

## SCIENTIFIC ACTIVITIES

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<b>Organization of a working group about Conformal Prediction.</b> Laboratoire de Mathématiques d'Orsay.	<i>2023 - 2024</i>
<b>Parimaths.</b> Mathématiques vulgarization session for high school students. Ecole Normale Supérieure, Paris.	<i>January 2023</i>