

Paul Rosa

Curriculum vitae

Academic positions

2025- **Post Doctoral Research Associate**, *Statistical Laboratory, University of Cambridge & Informed-AI hub*, Cambridge, UK
advised by Prof. Po-Ling Loh

Education

2021 - 2025 **DPhil in Statistics**, *Bayesian Nonparametric Estimation under the Manifold Hypothesis*, supervised by Judith Rousseau, Department of Statistics, University of Oxford

2020 - 2021 **M.Sc advanced mathematics**, *probability and statistics*, Ecole Normale Supérieure de Lyon
with highest honours

2020 **National competitive exam for math teachers recruitment ("Agrégation de mathématiques")**
rank : 39th

2019 - 2020 **M.Sc mathematics & applications - advanced mathematics for secondary and higher education**, *Rennes 1 University - École Normale Supérieure de Rennes*
with highest honours

2018 - 2019 **M.Sc (1st year) mathematics & applications**, *Rennes 1 University - École Normale Supérieure de Rennes*
with highest honours

2017 - 2018 **B.Sc Mathematics**, *Rennes 1 University - École Normale Supérieure de Rennes*
with highest honours

2017 - 2021 **Normalien student**, *École Normale Supérieure de Rennes*, trainee civil servant in the mathematics department

Publications

Preprints

2025 **L^2-posterior contraction rates for Gaussian process and random series priors in Bayesian nonparametric regression models**, *arXiv preprint*

Published

2025 **Nonparametric regression on random geometric graphs sampled from submanifolds**, *P.R. & Judith Rousseau*, Journal of Machine Learning Research

2024 **Estimating a density near an unknown manifold: a Bayesian nonparametric approach**, *Clément Berenfeld, P.R. & Judith Rousseau*, The Annals of Statistics

2023 **Posterior Contraction Rates for Matérn Gaussian Processes on Riemannian Manifolds**, *P.R., Viacheslav Borovitskiy, Alexander Terenin & Judith Rousseau*, proceedings of the 37th Conference on Neural Information Processing Systems

Scientific activites

Miscellaneous

2025 **Research visit**, *Isaac Newton Institute for Mathematical Sciences*, Cambridge, UK
"Representing, calibrating & leveraging prediction uncertainty from statistics to machine learning" programme

Organisation

Statistical Laboratory, Centre for Mathematical Sciences, Wilberforce Road, CB3 0WB, Cambridge
United Kingdom
pfr25@cam.ac.uk

2025 **Part of the scientific committee**, *The Bayesian Young Statisticians Meeting (BAYSM)*, online event

Reviewing duties

The Annals of Statistics, Bernoulli, NeurIPS, ICML, AIHP, Bayesian Analysis, Journal of Computational and Graphical Statistics

Awards

2024 **Junior Travel Award & Poster Award**, *ISBA world meeting*

2022 **Junior Travel Award & Poster Award**, *ISBA world meeting*

Presentations

Talks

2026 **ISBA World Meeting**, *WINC AICHI, Nagoya, Japan*, L^2-posterior contraction rates for Gaussian process and random series priors in Bayesian nonparametric regression models

2025 **CFE-CMStatistics**, *Birkbeck, University of London*, On L^2-posterior contraction rates in Bayesian nonparametric regression models
(invited talk)

2025 **StatMathAppli**, *Villa Clythia, Fréjus, France*, On L^2-posterior contraction rates in Bayesian nonparametric regression models

2025 **Early Career Pioneers in Uncertainty Quantification and AI for Science**, *Isaac Newton Institute for the Mathematical Sciences, Cambridge, UK*, On L^2-posterior contraction rates in Bayesian nonparametric regression models
(invited talk)

2025 **Gaussian processes and related topics**, *Institut de Mathématiques de Toulouse, Toulouse, France*, On L^2-posterior contraction rates in Bayesian nonparametric regression models
(invited talk)

2025 **Informed-AI Summer School**, *University of Bristol*, On L^2-posterior contraction rates in Bayesian nonparametric regression models

2024 **International Conference on Statistics & Data Science (ICSDS)**, *Nice, France*, Nonparametric Regression on Random Geometric Graphs Sampled from Submanifolds
(invited talk)

2024 **Statistical aspects of non-linear inverse problems**, *Cambridge, UK*, Nonparametric Regression on Random Geometric Graphs Sampled from Submanifolds

2023 **StatMathAppli**, *Frejus, France*, *Manifold-adaptive regression: insights from the behaviour of Matérn processes and Besov priors*

2023 **Theory for scalable, modern statistical methods**, *Bocconi University, Italy*, *Manifold-adaptive regression: insights from the behaviour of Matérn processes*

2023 **BNP-ISBA webinar**, *online*, *Bayesian nonparametric manifold learning*, (jointly with Judith Rousseau)

Poster presentations

2024 **ISBA world meeting**, *Venice, Italy*, *Nonparametric regression on random geometric graphs sampled from submanifolds*, **(listed as part of the best poster presentations)**

2023 **Neurips 2023**, *New Orleans, USA*, *Posterior Contraction Rates for Matérn Gaussian Processes on Riemannian Manifolds*, **(spotlight poster)**

2023 **Approximation in Bayesian analysis**, *Marseille, France*, *Manifold adaptive regression : insights fron the behaviours of the Matern processes and Besov priors*

2023 **BayesComp**, *Levi, Finland*, *Estimating a density near an unknown manifold : a Bayesian nonparametric approach*

2022 **ISBA world meeting**, *Montreal, Canada*, *Estimating a density near an unknown manifold : a Bayesian nonparametric approach*, **(listed as part of the best poster presentations)**

Teaching

2022-2024 **Tutor**, *Statistics & Probability*, Mathematical Institute, Balliol College, University of Oxford

2023 **Tutor**, *Introduction to University Mathematics*, Mathematical Institute, Keble College, University of Oxford

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2023 **Tutor**, *Statistics*, Mathematical Institute, Magdalen College, University of Oxford

2022 **Tutor/teaching assistant**, *Stochastic models for mathematical genetics*, Department of Statistics, University of Oxford

2022 **Teaching assistant**, *Advanced topics in statistical machine learning*, Department of Statistics, University of Oxford

2022 **Teaching assistant**, *Optimisation for data science*, Mathematical institute, University of Oxford

2020-2021 **Oral examiner in mathematics (preparation for entrance exams in engineering and scientific reearch schools)**, *Lycée La Martinière Monplaisir (Lyon, France)*

Internships

April - July 2021 **PAC-Bayesian learning theory**, *GRAAL research team*, Université Laval, Québec

June - July 2019 **Introduction to rough paths**, *advisor : Peter Friz*, Technische Universität Berlin

June 2018 **Random walks on compact groups and harmonic analysis**, *advisors : Reda Chhaibi & Laurent Miclo*, Toulouse Institute of Mathematics

Others

2022-2023 **Welfare representative**, *Jesus College MCR (Oxford)*

2022-2023 **First year representative**, *Jesus College MCR (Oxford)*

Coding skills

Writing tools LaTeX

Programming Python, R

Languages

French native

English fluent

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