Nicolas Jouvin

Researcher in Statistics

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Born on November 7, 1993

Current position

2022- . . . **INRAE researcher**, MIA-Paris-Saclay

Past experience

2021-2022 **Postdoc in statistics**, Ecole Centrale Lyon - Institut Camille Jordan
Sparse estimation of mixture models. Supervised by Yohann De Castro (EC Lyon).

Education

2017 - 2020 **PhD in applied statistics**, SAMM - Institut Curie
High-dimensional data and graph clustering with discrete latent variable models. Supervisors: Pierre Latouche (MAP5), Charles Bouveyron (J.A. Dieudonné) & Alain Livartowski (Institut Curie).

2016 – 2017 **Master in Mathematics, Computer Vision and Machine Learning**, ENS Cachan (now ENS Paris-Saclay)

2015 - 2016 **Master in Applied Mathematics**, Université Paris I Panthéon-Sorbonne

2012 – 2015 **Bachelor in Applied Mathematics**, Université Paris I Panthéon-Sorbonne

Research experience

Publications and preprints

Yohann de Castro, Rémi Gribonval, and Nicolas Jouvin (July 2025). *Effective regions and kernels in continuous sparse regularisation, with application to sketched mixtures.* preprint
HAL preprint

Hugo Gangloff and Nicolas Jouvin (Dec. 2024). *jinns: a JAX Library for Physics-Informed Neural Networks*
Package paper: HAL preprint and Package website

Etienne Côme and Nicolas Jouvin (May 2022). "greed: An R Package for Model-Based Clustering by Greedy Maximization of the Integrated Classification Likelihood". preprint
Package paper: HAL preprint and Package website

Nicolas Jouvin, Charles Bouveyron, and Pierre Latouche (2021). "A Bayesian Fisher-EM algorithm for discriminative Gaussian subspace clustering"
Version: HAL or Journal

Etienne Côme, Nicolas Jouvin, Pierre Latouche, and Charles Bouveyron (2021). "Hierarchical clustering with discrete latent variable models and the integrated classification likelihood". French. In: *Advances in Data Analysis and Classification*
Version: HAL or Journal

Nicolas Jouvin, Pierre Latouche, Charles Bouveyron, Guillaume Bataillon, and Alain Livartowski (2020). "Greedy clustering of count data through a mixture of multinomial PCA". in: *Computational Statistics*
Version: HAL or Journal

Talks and scientific communications

May 2025 **Journée de statistiques 2025**, *Problèmes inverses et apprentissage informé par la physique* , Marseille - France

May 2024 **Conference on Applied Statistics in Ireland**, *Model-Based Clustering by Greedy Maximization of the Integrated Classification Likelihood*, Lyon - France

May 2024 **Conference on Applied Statistics in Ireland**, *Model-Based Clustering by Greedy Maximization of the Integrated Classification Likelihood*, Lyon - France

April 2023 **Statlearn**, *Mixture of Poisson PCA for joint clustering and dimension reduction of count-data*, Montpellier - France

June 2022 **Journée de statistiques 2022**, *Model-Based Clustering by Greedy Maximization of the Integrated Classification Likelihood*, Lyon - France

March 2022 **Séminaire Statistique au sommet de Rochebrune 2022**, *Classification hierarchique basée sur une maximisation gloutonne de l'ICL*, Megève - France

Janvier 2022 **INRIA *maasai* seminar (remote)**, *Joint clustering and dimension reduction with the Bayesian Fisher-EM algorithm*, Virtual

Septembre 2021 **Rencontres statistiques lyonnaises**, *Modèles de mélanges et clustering : application aux données de grande dimension*, Institut Camille Jordan - Lyon - France

July 2021 **2021 ISBA World Meeting (remote)**, *Joint clustering and dimension reduction with the Bayesian Fisher-EM algorithm*, Virtual

June 2021 **52^{e} Journées de Statistique (remote)**, *A Bayesian Fisher-EM algorithm for discriminative Gaussian subspace clustering*, Virtual

April 2021 **Séminaire de statistiques du MAP5 (remote)**, *A Bayesian Fisher-EM algorithm for discriminative Gaussian subspace clustering*, Laboratoire MAP5, Université de Paris, France

April 2021 **Séminaire du LMO (remote)**, *Model-based hierarchical clustering with the integrated classification likelihood*, Laboratoire de mathématiques d'Orsay, Orsay, France

March 2021 **Séminaire du MIA-Paris (remote)**, *Greedy clustering of count data through a mixture of multinomial PCA*, Laboratoire MIA-Pairs, INRAE, France

January 2021 **Séminaire du MSI-DHlab (remote)**, *Clustering high-dimensional count data through a mixture of multinomial PCA* , Maison de la Modélisation, de la Simulation et des Interactions, Nice, France

June 2019 **SAMM laboratory PhD seminar**, *Clustering anatomopathological reports with a mixture of multinomial PCA*, Université Paris 1 Panthéon-Sorbonne, Paris, France

June 2019 **51^{e} Journée de Statistiques**, *Mixture of multinomial PCA*, Université de Lorraine, Nancy, France

January 2019 **The mathematics of imaging - CIRM winter school**, *Mixture of multinomial PCA: towards a joint analysis of histopathological texts and images*, Centre international de recherche en mathématiques, Marseille, France.

November 2018 **Welcome day for PhD students**, Fondation Science Mathématiques de Paris, Paris, France

Students

Internships

2025 **Mohamed Badi**, M2 student at Université Paris-Saclay/Centrale Supélec, with Hugo Gangloff and Pierre Gloaguen
Meta-modeling for the Fisher-KPP equations with PINNs.

2025 **Antoine Regardin**, M2 student at Université de Strasbourg, with Lucia Clarotto and Hugo Gangloff
Generative models and physics-informed neural networks.

2024 **Yanis Jouanaud**, M1 student at Télécom Sud Paris, with Hugo Gangloff, Béatrice Laroche and Lorenzo Sala
Predicting Microbial Community Interactions using Physics Informed Neural Networks

2023 **Khaled Bouguila**, M1 student at ENSTA Paris
2 month internship on Poisson log-normal quadratic discriminant analysis

2022 **Illia Bovtriuk**, Taras Schevchenko National University of Kyiv
3 month internship on supervised classification of bovine embryo-genesis videos for the RAMP Studio data-challenge Bovine Embryos Movies

Teaching

2025 **Université Lyon 1**
Teacher in *M2 Maths en Actions*. Course on unsupervised learning and latent variable modeling (12h/year)

2022-2025 **Associate professor at Paris-Saclay (64h/year)**
Teacher in *M2 data-science: santé, assurance et finance*. I taught latent variable modeling, scientific programming and monitored machine learning project and apprenticeship students.

2021 **Teaching assistant at École Centrale Lyon (40h/year)**
Convex and non-convex optimisation in finite dimension, integration and measure, ODE

2017– 2020 **Teaching assistant at Université Paris 1 (64 h/year)**
1nalysis, scientific programming, machine learning