

ACADEMIC APPOINTMENTS

Visiting Assistant Professor at Cornell University Department of Statistics and Data Science	Ithaca, United States Since Aug. 2024
Visiting Researcher at Harvard University Invited by Tracy Ke. Working on topic models and time series.	Cambridge, United States April-May 2023
Visiting Researcher at Cornell University Invited by Florentina Bunea. Working on topic models and optimal transport.	Ithaca, United States May 2023
Graduate Researcher at CREST Under the supervision of Cristina Butucea.	Palaiseau, France Jan. 2021 –Aug. 2021

GRANTS

Junior Scientific Visibility Fondation Mathématique Jacques Hadamard (2300€)	2023
PhD Grant GENES (70k€)	2021-2024

EDUCATION

Institut Polytechnique de Paris: PhD in Mathematical Statistics PhD in the department of Statistics of CREST, supervised by Pr. Cristina Butucea. Title: <i>Matrix-valued time series in high dimension</i> . Jury: Alexandre Tsybakov (President), Florentina Bunea & Maxim Panov (Reviewers), Christophe Pouet, Catherine Matias & Farida Enikeeva (Examiners).	2017-2020
ENSAE IP Paris: M.Sc Statistics and Learning	2017-2020
Ecole Polytechnique M.Sc Data Science	2019 –2020
Institution Aux Lazaristes: Intensive Preparation for nationwide competitive exams	2014–2017

PUBLICATIONS

1. N. Bettache, C. Butucea, “Two-sided Matrix Regression”, *Arxiv preprint 2303.04694*, (2023)
2. N. Bettache, C. Butucea, M.Sorba, “Fast nonasymptotic testing and support recovery for large sparse Toeplitz covariance matrices”, *Journal of Multivariate Analysis*, vol 190, pp 104883, DOI: 10.1016/j.jmva.2021.104883 (2022)

TEACHING

Founder of <u>Nayel Prépa</u> Linear Algebra, PDEs, Algebraic structures, Topology. Founding a company democratising access to high-quality mathematics education. Pioneering online live teaching sessions for 15+ undergraduate students at a time. Publishing 78 videos, garnered 6k subscribers and amassed over 200k views on <u>YouTube</u> . Training successfully 100+ students with a stellar 100% 5-star rating on <u>Trustpilot</u> .	Online Sep. 2021 –Aug 2024
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Teaching Assistant: ENSAE IP PARIS

Measure Theory, Probability Theory, Convex Optimization, Statistical Learning.
 Honored in the top 1% of teachers for exceptional pedagogical quality.

Palaiseau, France

Jan. 2021 –May 2024

Mathematics Oral Examiner: Lycée Michelet

Linear Algebra, PDEs, Algebraic structures, Topology.

Providing weekly examinations to undergraduate students.

Preparing students for nationwide competitive exams.

Vanves, France

Sep. 2018 –Apr. 2020

TALKS

Two-sided Matrix Regression

European Meeting of Statistician

Warsaw, Poland

Jul. 2023

Two-sided Matrix Regression

Harvard Stat300 Seminar

Cambridge, USA

May 2023

Two-sided Matrix Regression

PhD Student Day

Palaiseau, France

Mar. 2023

Stationary Time Series: Testing and Lag Selection procedures

PhD Student Day

Palaiseau, France

Mar. 2022

CONFERENCES

Statistics and Learning Theory in the Era of Artificial Intelligence

Oberwolfach, Germany

Jun. 2024

Meeting in Mathematical Statistics

Luminy, France

Dec. 2023

European Meeting of Statisticians

Warsaw, Poland

Jul.2023

Jianqing Fan's 60th Birthday Celebration

Princeton, USA

May 2023

Meeting in Mathematical Statistics

Luminy, France

Dec. 2022

IMS Meeting

London, UK

Jun. 2022

INTERNSHIPS

BNP PARIBAS CIB: Quantitative Research Intern

Under the supervision of Philippe Amzelek. Grade: 18.5/20.

Knowledge Graph Embedding: Query2box implementation with Pytorch Lightning.

London, United Kingdom

Jul.2020 –Dec. 2020

ADVESTIS: Quantitative Research Intern

Under the supervision of Christophe Geissler. Grade: 18/20.

Machine Learning for Cross-Asset Portfolio Optimisation.

Paris, France

Jun. 2019 –Oct. 2019

CREST: Research Intern

Under the supervision of Cristina Butucea. Grade: 17/20.

LASSO Procedures for High-Dimensional Regression under Sparsity Assumptions.

Palaiseau, France

Jun. 2018 –Sep. 2018