

ACADEMIC EXPERIENCE

PhD Candidate at CREST Under the supervision of Cristina Butucea. High dimensional statistics, Matrix-valued time series, Topic Models.	Palaiseau, France Since Sep. 2021
Visiting Researcher at Harvard University Invited by Tracy Ke. Topic Models, Time Series.	Cambridge, United States April-May 2023
Visiting Researcher at Cornell University Invited by Florentina Bunea. Topic Models, Optimal Transport.	Ithaca, United States May 2023
Graduate Researcher at CREST Under the supervision of Cristina Butucea. High dimensional regression, Tensor decomposition, Convex optimization.	Palaiseau, France Jan. 2021 –Aug. 2021

EDUCATION

ENSAE IP Paris: M.Sc Statistics and Learning	2017 –2020
Ecole Polytechnique M.Sc DataScience	2019 –2020
Institution Aux Lazaristes: Classes Préparatoires MPSI-MP	2014–2017

PUBLICATIONS

- [1] **N. Bettache** and C. Butucea, “Two-sided matrix regression”, *arXiv preprint arXiv:2303.04694*, 2023.
- [2] **N. Bettache**, C. Butucea, and M. Sorba, “Fast non-asymptotic testing and support recovery for large sparse toeplitz covariance matrices”, *Journal of Multivariate Analysis*, 2022.

TEACHING

- **Teaching Assistant** at ENSAE IP PARIS Since Jan. 2021
Measure Theory, Probability Theory, Convex Optimization, Statistical Learning, Linear Algebra, Statistics.
- **Mathematics Oral Examiner** at Lycée Michelet Sep. 2018 –Apr. 2020
Providing weekly examinations to second year students preparing nationwide competitive exams.

PROFESSIONAL EXPERIENCE

BNP PARIBAS CIB: Quantitative Research Internship Under the supervision of Philippe Amzelek. Knowledge Graph Embedding: Query2box implementation with Pytorch Lightning.	London, United Kingdom Jul.2020 –Dec. 2020
ADVESTIS: Quantitative Research Internship Under the supervision of Christophe Geissler. Machine Learning for Cross-Asset Portfolio Optimisation.	Paris, France Jun. 2019 –Oct. 2019
CREST: Research Intern Under the supervision of Cristina Butucea. LASSO Procedures for High-Dimensional Regression under Sparsity Assumptions.	Palaiseau, France Jun. 2018 –Sep. 2018

GRANTS

- **Junior Scientific Visibility:** Fondation Mathématique Jacques Hadamard (2300€) 2023

TALKS

- **Talks:** PhD Student Day, CREST (2022 & 2023), Stat300 Seminar, Harvard (2023)