

Naoufal Acharki

3RD YEAR PhD STUDENT IN STATISTICS & MACHINE LEARNING
BORN ON 02 NOVEMBER 1996 · 25 YEARS OLD · MOROCCAN

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PROFESSIONAL ACTIVITIES AND INTERNSHIPS

- Oct 2019 – now** **Ph.D. Candidate** – Industrial PhD (CIFRE Contract) TOTALÉNERGIES ONETECH
In the Data Science & AI program - numeric platform for power and sustainability R&D - working on a research subproject, coupling causality with machine learning, with a focus on uncertainty quantification.
- Mar – Sep 2019** **Research intern** TOTAL S.A.
« Statistical learning and sensitivity analysis (Master's thesis) » – Supervisors: Pr. Josselin Garnier and Dr. Antoine Bertonecello.

EDUCATION

- 2019 – now** **Ph.D.** in Applied Mathematics CMAP, ÉCOLE POLYTECHNIQUE
Title of Ph.D. : « Statistical learning and causal inference for energy production » – Supervisors: Pr. Josselin Garnier, Dr. Antoine Bertonecello.
- 2018 – 2019** **M.Sc.** in Applied Mathematics PARIS 1 PANTHÉON-SORBONNE UNIVERSITY
Mathematical Models and Methods of Economics and Finance - MMMEF.
- 2016 – 2019** **Graduate Engineering degree** ÉCOLE NATIONALE SUPÉRIEURE DES MINES DE SAINT-ETIENNE
Major in Data Science; Minor in Operations Research and High Performance Computing.
- 2016 – 2017** **B.S.** in Mathematics JEAN-MONNET UNIVERSITY
Main areas of study: Measure and Integration, topology, statistical inference, probability and PDE.
- 2014 – 2016** **Preparatory classes** LYCÉE MOULAY AL HASSAN, TANGIER
Two-year undergraduate intensive courses in mathematics and physics for competitive examination.

PUBLICATIONS

PUBLICATIONS

1. **Acharki, N.** Bertonecello, A. and Garnier, J. (2021). "Robust Prediction Interval estimation for Gaussian Processes by Cross-Validation method". *Submitted to Computational Statistics and Data Analysis, under revision*. Available at arXiv: 2106.05396.
2. **Acharki, N.** Bertonecello, A., Garnier, J. and Lugo R. (2022) "Heterogeneous Treatment Effects Estimation: When Machine Learning meets multiple treatments regime". preprint. Available at arXiv: 2205.14714.

ON-GOING WORK

1. **Acharki, N.** Bertonecello, A. and Garnier, J. (2022) "Exploring continuous treatments heterogeneous effects using non-parametric Machine Learning".

SUMMER AND WINTER SCHOOLS

- Oct 2021** **Machine Learning Summer School MLSS 2021**, National Taiwan University, Taipei, Taiwan.
- Jul 2021** **Hi! PARIS Summer School 2021 on AI & Data for Science, Business and Society**, Institut Polytechnique de Paris and HEC, Palaiseau, France.

- Sep 2020 **Gaussian Process and Uncertainty Quantification Summer School**, *The University of Sheffield*, Sheffield, UK.
- Jan 2020 **Data Science, Optimization and Operations Research Winter School**, *École Polytechnique Fédérale de Lausanne EPFL*, Zinal, Switzerland.

ORAL AND POSTER COMMUNICATIONS

- June 2022 **Journées de Statistique JdS'22 (talk)**, *French Statistical Society SFdS*. Lyon, France.
- June 2022 **The Causal TAU seminar (Invited talk)**, *INRIA Saclay & LISN*. Gif-sur-Yvette, France.
- June 2022 **MASCOT-NUM 2022 annual meeting (talk)**, *GdR MASCOT-NUM*. Clermont-Ferrand, France.
- May 2022 **Journée Causalité/XAI (talk)**, *SINCLAIR - EDF Lab Paris-Saclay*. Palaiseau, France.
- Apr 2022 **SIAM Conference on Uncertainty Quantification UQ22 (talk)**, *SIAM*. Atlanta, Georgia, U.S.
- Nov 2021 **CMAP and CMLS PhD students seminar (talk)**, *Centre de Mathématiques Appliquées*. Palaiseau, France.
- Oct 2021 **Young Statisticians and Probabilists 2021 (talk)**, *French Applied and Industrial Mathematical Society SMAI*. Saint Pierre d'Oléron, France.
- Oct 2021 **MATHIAS Days 2021 (poster)**, *TotalEnergies R&D*, Serris, France.
- Sep 2021 **European Network for Business and Industrial Statistics ENBIS 2021 (talk)**, Virtual.
- Aug 2021 **Machine Learning Summer School MLSS 2021 (poster)**, Virtual, *National Taiwan University*, Taipei, Taiwan.
- Jun 2021 **Recent advances in machine learning and uncertainty workshop (talk)**, *Centre International de Rencontres Mathématiques*, Marseille, France.
- Oct 2020 **Causal Inference workshop, (talk)**, *Total R&D*, Palaiseau, France.
- Sep 2020 **European Network for Business and Industrial Statistics ENBIS 2020 (Invited talk, cancelled due to COVID-19)**, *Universitat Politècnica de València*, Valencia, Spain.
- Sep 2020 **CSE, AI and ML workshop (talk)**, *Total R&D*, Palaiseau, France.
- Oct 2019 **MATHIAS Days 2019 (talk)**, *Total R&D*, Serris, France.

HONORS AND SCHOLARSHIPS

- 2020 – 2022 **Study abroad grant**, *Moroccan Ministry of Higher Education and Scientific Research*.
- 2016 – 2019 **Merit grant**, *Moroccan Ministry of Higher Education and Scientific Research*.
- Jun 2014 **Baccalauréat with major in maths**, ranked 2nd in the city of Ksar El Kebir, Morocco.
- Jul 2013 **Regional Competition in Sciences and Technology**, ranked 5th in the competition of maths.

LANGUAGES AND PROGRAMMING SKILLS

Languages — Arabic: *Native*. French: *Bilingual*. English: *Proficient*. Spanish: *Elementary*.
 Programming — R, Python: *Advanced*. \LaTeX , MATLAB: *Intermediate*. VBA, C++: *Elementary*.

MISCELLANEOUS

I participated and have been declared Winner of the IMT-Total data science challenge in Feb 2018, and I have been part of the organization committee of the AirLiquide.TotalEnergies data challenge.

Member of SIAM, ENBIS, French Statistical (SFdS) and Mathematical Societies (SMF).

REFERENCES

- Pr. Josselin Garnier josselin.garnier@polytechnique.edu
 Dr. Antoine Bertonecello antoine.bertonecello@totalenergies.com
 Pr. Olivier Roustant roustant@insa-toulouse.fr
 Dr. Rodolphe Leriche leriche@mines-stetienne.fr;