

Naoufal Acharki

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

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PROFESSIONAL ACTIVITIES AND INTERNSHIPS

Oct 2019 – present	Ph.D. Candidate – Industrial PhD (CIFRE Contract) In the CSE, AI and Data Science Program in the R&D division: working on a research subproject developing a data-driven approach, coupling causality with machine learning, with a focus on uncertainty quantification.	TOTAL ENERGIES ONE TECH
Mar – Sep 2019	Research intern « Statistical learning and sensitivity analysis (Master's thesis) » – Supervisors: Pr. Josselin Garnier and Dr. Antoine Bertoncello.	TOTAL S.A.
June – Sep 2018	Research intern « Exploring wells with Topological Data Analysis » – Supervisor: Dr. Antoine Bertoncello.	TOTAL S.A.

EDUCATION

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

PUBLICATIONS

CONFERENCE AND JOURNAL PUBLICATIONS

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

ON-GOING WORK

1. **Acharki, N.** Bertoncello, 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 , <i>National Taiwan University</i> , Taipei, Taiwan.
Jul 2021	Hi! PARIS Summer School 2021 on AI & Data for Science, Business and Society , <i>Institut Polytechnique de Paris and HEC</i> , Palaiseau, France.
Sep 2020	Gaussian Process and Uncertainty Quantification Summer School , <i>The University of Sheffield</i> , Sheffield, UK.
Jan 2020	Data Science, Optimization and Operations Research Winter School , <i>École Polytechnique Fédérale de Lausanne EPFL</i> , Zinal, Switzerland.

ORAL AND POSTER COMMUNICATIONS

Apr 2022	SIAM Conference on Uncertainty Quantification UQ22 (talk) , <i>SIAM</i> . Atlanta, Georgia, U.S.
Nov 2021	CMAP and CMLS PhD students seminar (talk) , <i>Centre de Mathématiques Appliquées</i> . Palaiseau, France.
Oct 2021	Young Statisticians and Probabilists 2021 (talk) , <i>Société de Mathématiques Appliquées et Industrielles</i> . Saint Pierre d'Oleron, France.
Oct 2021	MATHIAS Days 2021 (poster) , <i>TotalEnergies R&D</i> , 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, <i>National Taiwan University</i> , Taipei, Taiwan.
Jun 2021	Recent advances in machine learning and uncertainty workshop (talk) , <i>Centre International de Rencontres Mathématiques</i> , Marseille, France.
Oct 2020	Causal Inference workshop, (talk) , <i>Total R&D</i> , Palaiseau, France.
Sep 2020	European Network for Business and Industrial Statistics ENBIS 2020 (invited talk, cancelled due to COVID-19) , <i>Universitat Politècnica de València</i> , Valencia, Spain.
Sep 2020	CSE, AI and ML workshop (talk) , <i>Total R&D</i> , Palaiseau, France.
Oct 2019	MATHIAS Days 2019 (talk) , <i>Total R&D</i> , Serris, France.
Oct 2018	MATHIAS Days 2018 (talk) , <i>Total R&D</i> , Serris, France.

HONORS AND SCHOLARSHIPS

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

REFERENCES

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