



Pierre LAFORGUE

PhD in Machine Learning

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Education

- 2020 - Present** **Università degli Studi di Milano**, Postdoctoral researcher,
working with N. Cesa-Bianchi on the analysis of online and active learning algorithms
- 2016 - 2020** **Télécom Paris, Institut Polytechnique de Paris**, PhD in Machine Learning,
prepared under the supervision of professors F. d'Alché-Buc and S. Cléménçon
DISSERTATION: *Deep Kernel Representation Learning for Complex Data and Reliability Issues*
KEYWORDS: learning theory, kernel methods, structured prediction, representation learning,
robust machine learning, Median-of-Means estimator, debiasing methods
GRANTS: recipient of a **research grant** by the industrial chair [Good in Tech](#) (2020)
PUBLICATIONS: [[1](#), [2](#), [3](#), [4](#), [5](#), [6](#)], [Google Scholar](#), [Github](#)
- 2015 - 2016** **ENS Cachan, Université Paris Dauphine**, master's degree MASH
Theoretical machine learning courses (joint with MVA's: statistical learning theory, kernel methods,
convex optimization, graphical models) and applied ones (data marketing, privacy and fairness)
- 2013 - 2016** **ENSAE Paris**, master's degree in Statistical Learning
French engineering school (grande école) specialized in statistics and applied mathematics
- 2010 - 2013** **Lycée Henri IV (Paris)**, preparatory classes MPSI/MP
Undergraduate courses in mathematics and physics to prepare nationwide competitive exams

Professional Experience

- 2016 - 2019** **Scientific advisor on Data Science projects at Télécom Paris**
- Energy saving in a silicon furnace (Bearing Point & Ferroglabe 2019)
- Multi-dimensional time series visualization (Safran 2018)
- Predictive maintenance on helicopters (Safran 2017)
- 2016 - 2019** **Teaching assistant at Télécom Paris** (64 hrs / yr)
- Theoretical classes: Statistics, Linear Models, Advanced Statistical Learning
- Practical sessions and computer classes: Applied Machine Learning, Data Mining
- 2016** **Research intern at Télécom Paris** (6 months)
- Within machine learning department, under the supervision of professor S. Cléménçon
- Research topic: *Biased Stochastic Approximation of M-estimation Problems*
- 2015** **Statistical assistant at Assistance Publique des Hôpitaux de Paris** (5 months)
- Birth evolution forecasting in Île-de-France (Paris region)
- Optimization of the obstetrical care services in the region
- 2014** **Statistician at Affluences, mobile application startup** (4 months)
- Queuing time forecasting for the Bibliothèque Beaubourg (Paris)
- Data visualization on occupancy rates

Skills & Languages

Computer skills : Python (numpy, pytorch, pandas, scikit-learn), Latex, R

Languages : French (mother tongue), English (fluent), Spanish (intermediate)

Publications

- [1] G. Staerman, **P. Laforgue**, P. Mozharovskyi, F. d'Alché-Buc. *When OT meets MoM: Robust estimation of Wasserstein Distance*. Submitted, ArXiv preprint available at [arXiv:2006.10325](https://arxiv.org/abs/2006.10325), 2020.
- [2] **P. Laforgue**, G. Staerman, S. Cléménçon. *How Robust is the Median-of-Means? Concentration Bounds in Presence of Outliers*. Submitted, ArXiv preprint available at [arXiv:2006.05240](https://arxiv.org/abs/2006.05240), 2020.
- [3] **P. Laforgue**, S. Cléménçon. *On Statistical Learning from Biased Training Samples*. Submitted, ArXiv preprint available at [arXiv:1906.12304](https://arxiv.org/abs/1906.12304), 2020.
- [4] **P. Laforgue**, A. Lambert, L. Brogat-Motte, F. d'Alché-Buc. *Duality in RKHSs with Infinite Dimensional Outputs: Application to Robust Losses*. In Proceedings of ICML 2020.
- [5] **P. Laforgue**, S. Cléménçon, P. Bertail. *On Medians-of-(Randomized)-Pairwise Means*. In Proceedings of ICML 2019.
- [6] **P. Laforgue**, S. Cléménçon, F. d'Alché-Buc. *Autoencoding any Data through Kernel Autoencoders*. In Proceedings of AISTATS 2019.

Research Activities

Reviewing for : NeurIPS since 2019 (top reviewer 2019), ICML since 2020 (top reviewer 2020), ICLR since 2021

Selected talks : ENBIS 2018, JDS 2018, CAp 2019, CODA 2019, Tōdai 2019, Le Palaisien 2020, Datacraft 2020

Summer school : Participant to the Machine Learning Summer School (MLSS) in January 2019, South Africa

Miscellaneous

Young talent : Selected as a *Young Talent in Big Data* for the France-Netherlands *Erasmus Conference* (2017)

Startups : Involved in the development of the mobile application *Pollux Vote* (2016)

Associations : President of the ENSAE student *journal* (2014-2015)