



Pierre LAFORGUE

PhD Candidate in Machine Learning

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Education

- 2016 - Present** **Télécom Paris, Institut Polytechnique de Paris, PhD Candidate**
PhD Candidate in Machine Learning under the supervision of F. d'Alché-Buc and S. Cléménçon
RESEARCH INTERESTS: Learning Theory, Robust Learning, Median-of-Means, Debiasing Methods, Kernel Methods, Structured Prediction, Representation Learning
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 (professor): Graphical Models (F. Bach, S. Lacoste-Julien, G. Obozinski), Statistical Learning (N. Vayatis), Convex Optimization Theory (A. d'Aspremont), Kernel Methods (J. Mairal, J.P. Vert), and applied courses: 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 - Present** **Scientific Advisor on Data Science projects at Télécom Paris**
 - Predictive maintenance on helicopters (Safran 2017)
 - Multi-dimensional time series visualization (Safran 2018)
 - Energy saving in a silicon furnace (Bearing Point & Ferroglobe 2019)
- 2016 - Present** **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 (6 months)** **Research Intern at Télécom Paris**
 - Within Machine Learning department, under the supervision of S. Cléménçon
 - Research topic: *Biased Stochastic Approximation of M-estimation Problems*
- 2015 (5 months)** **Statistical Assistant at Assistance Publique des Hôpitaux de Paris**
 - Birth evolution forecasting in Île-de-France (Paris region)
 - Optimization of the obstetrical care services in the region
- 2014 (4 months)** **Statistician at Affluences, mobile application startup**
 - Queuing time forecasting for the Bibliothèque Beaubourg (Paris)
 - Data visualization on occupancy rates

Skills & Languages

Computer Skills : Python (numpy, scikit-learn, pytorch, pandas), Latex, R
Languages : French (mother tongue), English (fluent), Spanish (intermediate)

Publications

- [1] G. Staerman, **P. Laforgue**, P. Mozharovskiy, 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

Oral Communications : ENBIS 2018, JDS 2018, CAp 2018, 2019, CODA 2019, Tōdai 2019, Le Palaisien 2020
Summer Schools : Participant to the Machine Learning Summer School (MLSS) 2019, South Africa
Reviewing : NeurIPS 2019 (top reviewer), NeurIPS 2020, ICML 2020

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)