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. Clémençon
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], 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. Clémençon
- 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] **P. Laforgue**, A. Lambert, L. Brogat-Motte, F. d'Alché-Buc. *Duality in RKHSs with Infinite Dimensional Outputs: Application to Robust Losses*.
Submitted, ArXiv preprint available at arXiv:1910.04621, 2020.

[2] **P. Laforgue**, S. Clémençon. *Statistical Learning from Biased Training Samples*.
Submitted, ArXiv preprint available at arXiv:1906.12304, 2020.

[3] **P. Laforgue**, S. Clémençon, P. Bertail. *On Medians-of-(Randomized)-Pairwise Means*.
In Proceedings of ICML 2019.

[4] **P. Laforgue**, S. Clémençon, 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 : Official reviewer for 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)