Pierre LAFORGUE

PhD in Machine Learning

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Research Experience

2020 - Present **University of Milan**, Postdoctoral researcher (Sup. N. Cesa-Bianchi)
RESEARCH TOPIC: Online convex optimization, combinatorial semibandits, multitask learning
THESIS SUPERVISION: Co-supervising a PhD thesis on sketching OVK machines with F. d'Alché-Buc
PUBLICATIONS: [1], Google Scholar, Github

2016 - 2020 **Télécom Paris**, PhD in Machine Learning (Sup. F. d'Alché-Buc, S. Clémençon)
DISSERTATION: *Deep Kernel Representation Learning for Complex Data and Reliability Issues*
GRANTS: recipient of a research grant by the industrial chair *Good in Tech* (2020)
PUBLICATIONS: [2, 3, 4, 5, 6, 7, 8]

Other Professional Experience

2016 - 2019 **Scientific advisor on Data Science projects at Télécom Paris**
- Energy saving in a silicon furnace (Bearing Point & Ferroglobe 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

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

Education

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

Skills & Languages

Research interests : Learning Theory, Online Convex Optimization, Robust Learning, Kernel Methods
Computer skills : Python (numpy, pytorch, pandas, scikit-learn), Latex, R
Languages : French (native), English (fluent), Spanish (basics)

Publications

[1] **Multitask Online Mirror Descent** (Preprint 2021).
N. Cesa-Bianchi, P. Laforgue, A. Paudice, M. Pontil.

[2] **Statistical Learning from Biased Training Samples** (Preprint 2021).
S. Clémençon, P. Laforgue.

[3] **Concentration Bounds in the Presence of Outliers: a Median-of-Means Study** (ICML 2021).
P. Laforgue, G. Staerman, S. Clémençon.

[4] **When OT meets MoM: Robust estimation of Wasserstein Distance** (AISTATS 2021).
G. Staerman, P. Laforgue, P. Mozharovskyi, F. d'Alché-Buc.

[5] **Deep Kernel Representation Learning and Reliability Issues** (PhD Manuscript).
P. Laforgue.

[6] **Duality in RKHSs with Infinite Dimensional Outputs: Application to Robust Losses** (ICML 2020).
P. Laforgue, A. Lambert, L. Brogat-Motte, F. d'Alché-Buc.

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

[8] **Autoencoding any Data through Kernel Autoencoders** (AISTATS 2019).
P. Laforgue, S. Clémençon, F. d'Alché-Buc.

Research Activities

Reviewing for : NeurIPS, ICML, COLT, ICLR, ALT, JMLR, Machine Learning Journal (Springer)

Teaching for : Teaching assistant for RLVS 2021 (Online), participant to MLSS 2019 (South Africa)

Talking for : ELLIS 2021, Datacraft 2020, Le Palaisien 2020, Tōdai 2019, CAp 2019, JDS 2018, ENBIS 2018

Miscellaneous

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

Applications : Contributed to *Affluences* (queuing time forecasting), and *Pollux Vote* (political matching)

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